

AIRFIX magazine

May 1975

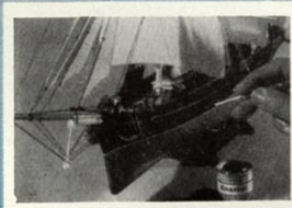
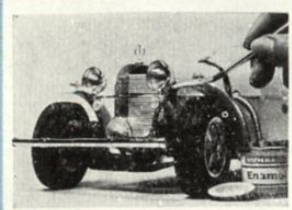
FOR PLASTIC MODELLERS

monthly 22p



in this issue

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Converting the Airfix Avenger kit
Scratch-built Cruiser Mk IVa tank



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AIRMODEL

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REPLICA IN SCALE

We still have a few copies remaining of the last issue, which was a combined issue numbered volume 2 nos 3/4 at £1.00. A few back issues are in stock, a S.A.E. will bring details. Subscriptions for Volume 3 are now being taken at only £2.20 for a year.

BOOKS

Skyraider by B.A.R.G.	£1.40	P40 Kittyhawk in Service	£3.00
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AIR ENTHUSIAST QUARTERLY

The first issue of this superb magazine is due in June. Each issue will be packed with 112 pages of original articles, with full colour photographs and drawings as well as a host of black and white photos. All aspects of aircraft will be covered, both current and wartime. Each issue costs £1.25 plus 8p post or try a yearly subscription for £5.00 post free. The print number is extremely limited and reprints will not be made so make sure of your copy.

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1/48 SCALE B17

The fabulous Monogram 1/48 B17 should be available during the early part of June, but only a few will be initially in the shops. The price will be £7.45 and as a special offer we are taking advance orders at the special low price of £6.50 plus postage of 54p.

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FROM CANADA

1/32Scale

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MONOGRAM CLOSE UPS

A new range of highly detailed aircraft profiles from the Monogram Aviation Publishers of the USA. Each title has at least 100 photos, colour spreads and all details needed for the modeller. The 1st three titles will soon be here at £1.85 each plus postage or all three post free.
(1) JU287 (2) JU288

make model kit painting easier

Revell's new range of enamels is ideal for all types of plastic modelling.

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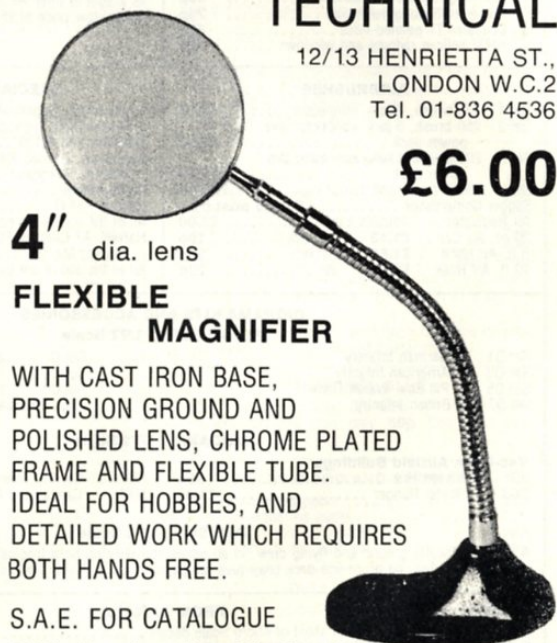
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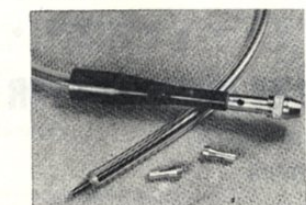
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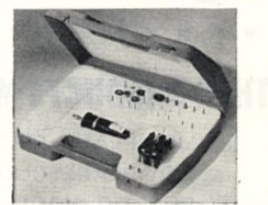
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AIRFIX magazine

May 1975
Volume 16 Number 9

FOR PLASTIC MODELLERS

Editorial offices
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Editor Bruce Quarrie
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Cover Picture

The Imperial War Museum's preserved P-51D Mustang WZ-I 472258 on display at Duxford, photographed by Neville Franklin. One of the most colourful of a colourful breed, this aircraft would make an attractive model using Airfix's new 1:72 scale kit (or even in 1:24 scale). This would not be as difficult as it might sound because Ren-Models of 63 Fitzroy Street, Cambridge, can supply sets of Aviation Historical Associates' transfers for this machine at 56p plus 12p postage. This sheet is a real bargain, because it also contains markings for another colourful Mustang, 'Jersey Jerk'.

Missing but not lost

We apologise for the absence from this issue of our two regular features, 'In the field' and 'Return from Balaclava', dictated by circumstances beyond our control. Both will definitely be back next month, however.

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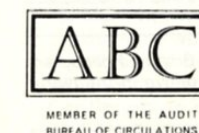
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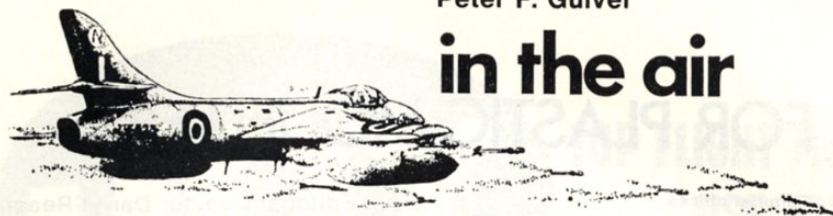
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May 1975



Peter F. Guiver

in the air

North Sea rig helicopter operations

WITH THE ENERGY Crisis so much in the headlines of late, it is important to remember that the search for North Sea oil has now been under way for over ten years.

As the number of drilling rigs and other installations have multiplied over the years, so has the need for speedy and efficient supply and support services, and this has meant a major growth in the scale of helicopter operations in the North and East of Britain.

Fixed-wing aviation has also increased significantly in this area, with many operators of varying sizes now involved in supporting the oil and natural gas programmes. Many types of aircraft are involved, ranging from the ubiquitous Dakota carrying freight and spares to the sleek business jets conveying oil company executives.

Amongst several helicopter operators now active in the North Sea area, the major British undertakings are Bristow Helicopters, whose main headquarters and engineering base is at Redhill Aerodrome, Surrey, and British Airways Helicopters who have a similar facility at London (Gatwick) Airport.

However, with the concentration of several rigs in the North Sea between the North of Scotland and Southern Norway, all needing support flights, both Bristows and BAH have set up new bases at Aberdeen and Sumburgh in the Shetland Islands, with each of these bases having full maintenance facilities.

Each of these operators have their own separate hangars at these bases, and a healthy competition exists between the two companies. Bristows have similar bases at Great Yarmouth and Paull, near Hull and, when necessary, additional operations are flown from other locations on the East coast, such as Tees-side. BAH also have a base at Beccles, near Lowestoft, and these installations on the East coast are used mainly to support the rigs involved in obtaining natural gas deposits, which are concentrated in the southern North Sea, to the north-east of the Wash.

With the search for oil now spreading to the Celtic Sea, Bristows have used Blackpool, Haverfordwest, Pembroke Dock and Cork in Ireland as bases to support the rigs in this new area, and British Airways Helicopters will be operating in the Celtic Sea from late 1975, using Haverfordwest or Swansea.

A variety of helicopter types are used on offshore services, and the largest both in terms of size and numbers operated is the Sikorsky S-61N. Bristows (who are the largest helicopter operators supporting the UK offshore energy programmes) have 14 of these aircraft, whilst BAH employ nine S-61s, with three more on order.

Used mainly on long range operations, the S-61 is powered by two General Electric T58 turbines, each of 1,500 shp, and can carry up to 26 passengers at a cruising speed of 224 kph/139 mph. External loads of up to 3,628 kg/8,000 lb may also be carried. The BAH aircraft are normally laid out to carry 16 passengers, with an area for freight. The new British Airways livery is now appearing on the BAH S-61s; three aircraft have so far been repainted, and this work is done at the operating base.

Another type used by both Bristows and BAH is the Sikorsky S-58T, which is a major rebuild of some ex-West German Army H-34s, a small batch of which were obtained in early 1974. This extensive conversion programme is under way by each company at both Redhill and Gatwick, and involves replacing the original piston engines with two Pratt and Whitney PT6T-6 'twin-pac' turbines producing 1,800 total shp.

This power plant consists of two turbine engines coupled to a combining gearbox with a single output shaft. The conversion is being carried out with a retrofit kit supplied by Sikorsky, and involves a complete

rebuild of the nose section to incorporate the new engines together with a new air intake. The airframes are also being extensively refurbished, and new avionics will be added to permit operations under instrument flight conditions. However, this programme has been somewhat delayed owing to the late delivery of the new engines.

The S-58T is employed on medium range support flights, and in addition to a crew of two can carry 16 passengers, or lift an external load of up to 2,539 kg/5,600 lb, at a cruising speed of 204 kph/127 mph, with a maximum range of 482 km/300 miles.

Other types in use include the Westland Wessex 60, which Bristows have been operating for nearly ten years, with five currently in service. Used on medium range work, the Wessex is capable of carrying 16 passengers, power coming from two Rolls-Royce Gnome turbines of 1,350 shp each.



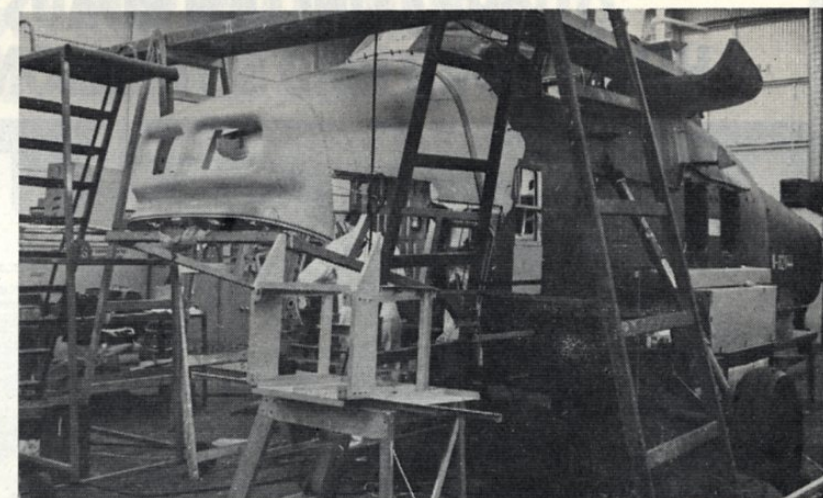
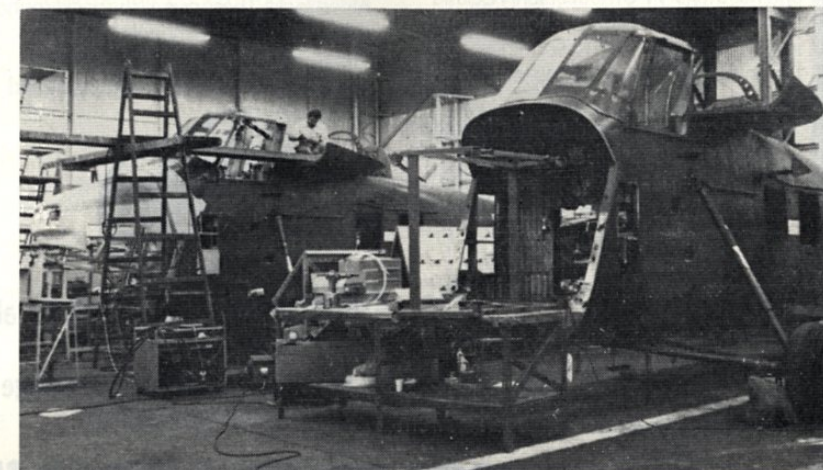
BAH also have in use at Beccles a Bell 212, a 14 seat medium range helicopter which is powered by two 1,800 total shp Pratt and Whitney PT6T-3 coupled turbines. This aircraft is a development of the famous series of Bell UH-1 helicopters, which have been used in many hundreds by the US Army and other military services.

All the above types of helicopter carry a comprehensive range of sophisticated navigational equipment, which is essential in the North Sea area with its severe and unpredictable changes in weather.

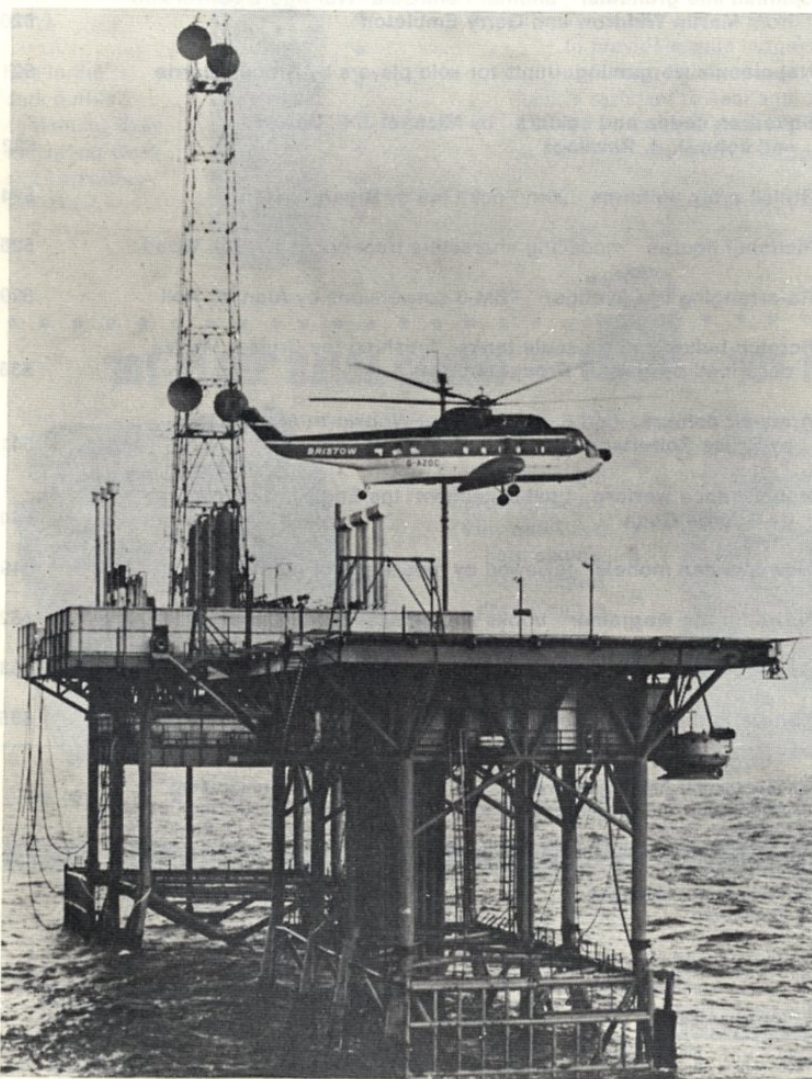
Helicopters have been involved in some major rescue operations, and the complete crews of rigs have been airlifted to safety at short notice. In one such mission in 1974, S-61Ns of BAH evacuated some 70 men in the teeth of a 112 kph/70 mph gale.

Some of the BAH S-61s are fitted with winches to enable them to carry out rescue operations under a contract with HM Coastguard. These rescue flights are in addition to the oil rig support services, and provide a long range rescue capability, to supplement the shorter range Whirlwinds of the RAF. The Wessex, S-58T and the Bell 212 are fitted with flotation gear for use in an emergency; the S-61 is capable of water landings, having a boat type hull.

Continued on page 518



Top a Bermudan-registered S-61 of Bristows on board a rig (Bristow Helicopters via Malcolm Pendrill Ltd). **Centre** two H-34s at Gatwick being transformed into Sikorsky S-58Ts for British Airways Helicopters. The nearer machine has the old piston engine removed in readiness to receive the new nose styling and turbine engine. **Above** nose detail of S-58T. The light coloured areas are the new nose and air intake supplied as part of the conversion kit by Sikorsky and are in yellow primer.



Left a Sikorsky S-61N of Bristow Helicopters prepares to land on an oil rig in the North Sea (Sikorsky Aircraft).

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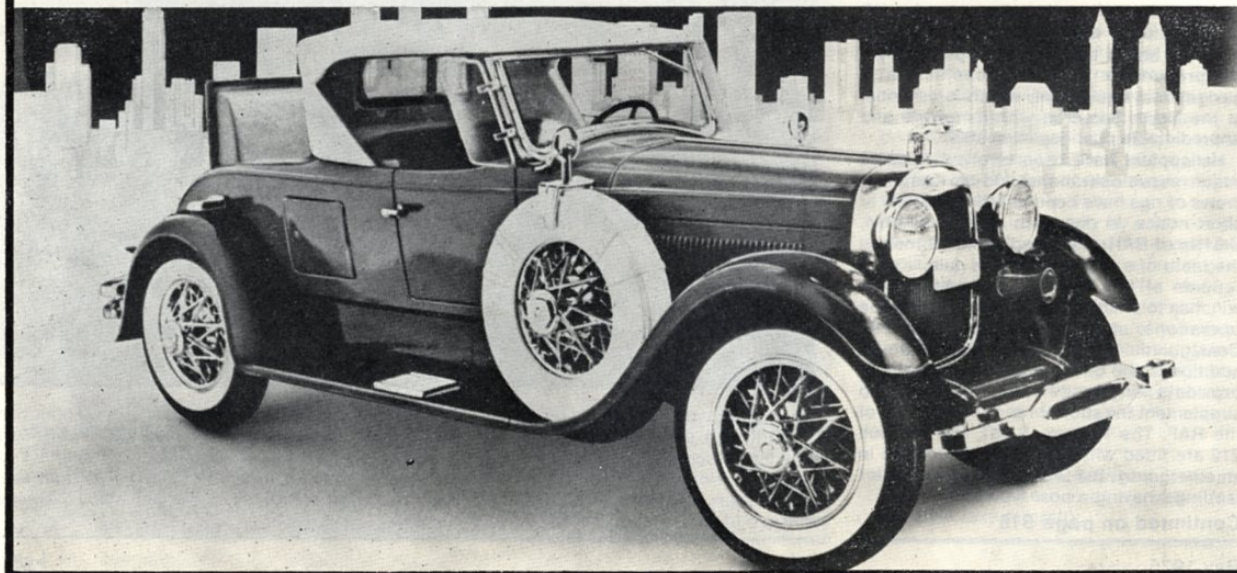
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THE BEAGLE PUP THAT GREW INTO
A SCOTTISH BULLDOG.





Continued from page 515

Some 30 rigs are now operating in the United Kingdom sectors, and with oil from the North Sea now starting to come ashore in quantity, and the search for new oil fields continuing apace, there will be many years of aviation activity assisting the production of energy for an ever-demanding world.

I would like to thank Bristow Helicopters and British Airways Helicopters for their help in the preparation of this article. □

Top S-61N G-AZDC of Bristow Helicopters in their standard colour scheme of blue top surfaces, red central band and white lower surfaces. Narrow cheat lines and company name white, rotor hub, tail fin tip, registration and top of undercarriage pods/floats with struts all red. **Right** newly converted S-58T G-BCRW in the same colour scheme.

Below Wessex 60 G-ATBY (all photos Bristow Helicopters via Malcolm Pendrill Ltd).



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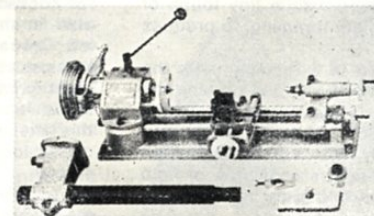
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Peninsular War figure conversions

This month, a Spanish Line Grenadier of 1813 from **Martin Windrow** and **Gerry Embleton**

THE SPANISH ARMY, such a shambles for so much of the war, began to improve in the last year or so of the campaign. Wellington had at last achieved a degree of control over Spanish military dispositions, and the liberation of a large part of the country combined with the freer flow of supplies from Britain to allow a measure of reorganisation. Some units were trained up to a more reliable standard, and most received new uniforms according to a standard pattern, manufactured in Britain and strongly reminiscent of the British cut.

It is thus quite easy to produce any 1813 Spanish line or light infantryman from Airfix parts, for a diorama of the Vittoria campaign perhaps. A group of Spanish and British soldiers of different units happily looting a treasure trove of French baggage would make an attractive scene!

For our single figure we chose a more conventional pose, however, to demonstrate the possibilities of mixing the optional legs and arms now available in the Airfix range.

The legs are from the Rifleman kit, the right kneeling and the left standing, joined

and 'faired together' with a tiny touch of putty and some slight trimming, to produce a running effect.

The torso is that of a Rifleman with the outer rows of buttons trimmed off, and the arms are from a Coldstream kit, with the cuffs trimmed off and the arms repositioned slightly. With a little imagination and some care endless variations of limb positions are possible with the available kits.

The shako worn by these troops was almost identical to the British 'stovepipe' pattern, so the Rifleman's can be adapted quite easily. The Spanish seem to have had leather peaks with a narrow brass edge-fillet. They wore a band of coloured braid around the base, and a pair of chin-tapes of

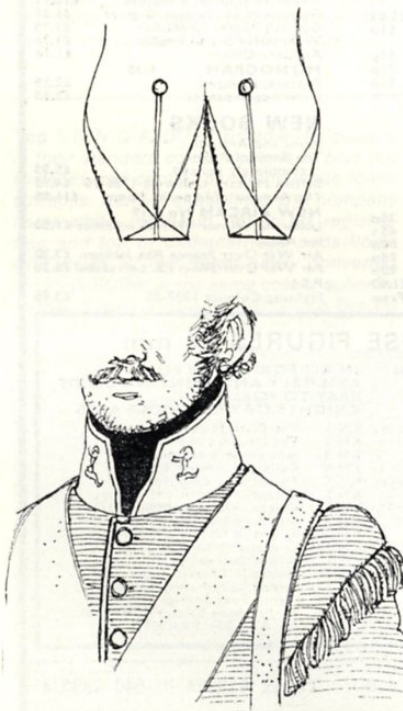
the same dimensions, which were often worn tied up over the top of the shako.

To simulate this, cut or file the surface detail from the cords on the Rifleman's shako to produce a flat tape effect. With a sharp blade cut inwards towards the tuft under the sections of this tape which run across the top of the shako, lifting slightly to produce the effect of a tied bow. Add the cockade as for the Rifleman, but not the buglehorn.

The shako furniture was as follows: **Centre or fusilier companies** — white tuft, red cockade, white bottom band and tapes, plate in shape of gold rampant lion facing left. **Grenadier company** — red tuft, braid, tapes, cockade; gold grenade-shaped plate. **Light company** — green tuft, braid and tapes, red cockade, gold buglehorn plate; this latter was larger than the 95th badge, of classic looped *cor-de-chasse* shape without strings.

Line infantry wore a coatee which can be made very easily from the Rifleman's torso. Remove the outer rows of buttons, as mentioned above, and file smooth the cuff detail on any arms you select, except those from the Rifleman kit which already have pointed cuffs. See accompanying sketches for tail and shoulder detail. Add the inner pair of turnbacks from plastic card.

Right finished model of a Spanish Line Infantry Grenadier, 1812-14. Note shoulder rolls added from Plasticine over the 'wings' from a Coldstream Guard kit. As on previous figures in this series, the crossbelts and pouch have been modelled in 'mid air' to give a vigorous air of movement to the figure. Note the 'tied bow' effect of the shaved-down cords behind the shako tuft. **Left** shoulder, collar and turnback details for a Spanish Line Infantryman of 1812-13 — colours as described in the text. A flank company roll is illustrated.



For a fusilier, cut shoulder straps from plastic card; these had three-pointed bastion-shaped outer ends. Flank company men wore a strap ending in a fat padded cloth roll on the point of the shoulder, with an outer fringe. We made ours by adding a roll of Plasticine (or you could use DAS, which hardens nicely) to the shoulder wings from a Coldstreamer kit, positioned to hide the wing but to expose the strap and fringe.

All companies wore dark blue coatees with red collars and cuffs, red turnbacks, and red piping down the front and around the bottom of the front. The shoulder straps were blue piped red, and two vertical lines of red piping ran down to the skirt from the rear buttons. All buttons were brass; nine on the front, two at the rear of each pointed cuff, and two each on the shoulders and the back. Grenadiers had red-fringed rolls, light infantry green-fringed rolls.

On each side of the collar appeared a brass monogram initial of the regimental title. We suggest 'L' for *Leon*; this regiment of Morillo's division fought bravely at Vittoria and in the Pass of Roncesvalles (historic ground indeed!) during the Pyrenees campaign. Also L is a nice easy letter to paint...

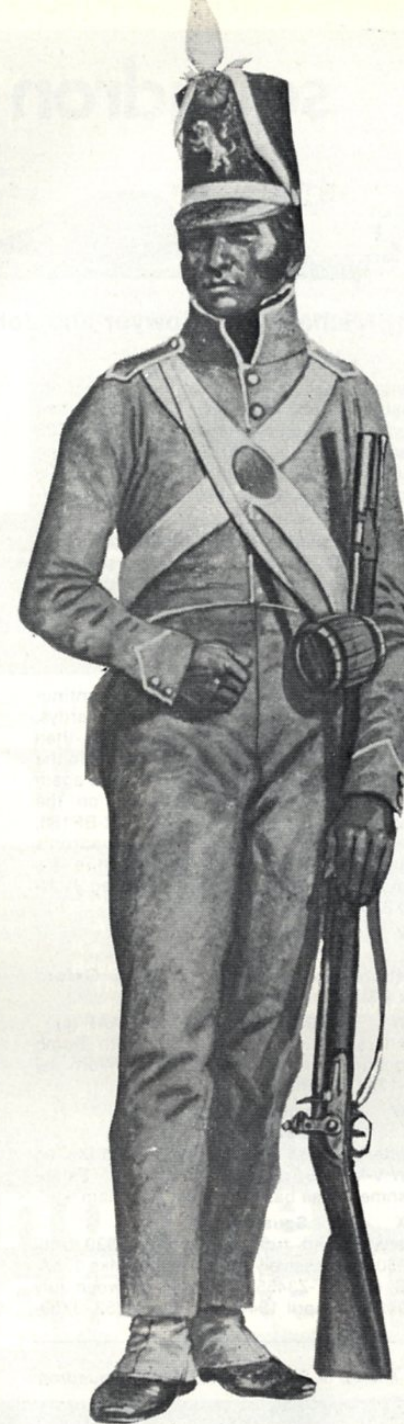
Trousers can be British grey, or a light azure blue; gaiters were grey, black or white, and boots black. Conventional white crossbelts supported a black cartridge pouch and a bayonet scabbard. Packs, if worn, can be tarred or painted black canvas British type, or the hide French type. A variety of blanket-rolls, British canteens, gourds or native wineskins can be strung around the figure to taste. Use either the Brown Bess from the Coldstream and Black Watch kits, or the French Imperial Guardsman's musket — differences really don't show at this scale.

We posed our Spaniard running through wet mud, and liberally splashed with same. This is an easy effect to achieve; simply press the feet of a scale figure several times into the putty or plaster 'ground' while it is wet, paint it dark brown or yellowish-grey, and coat with clear varnish when dry. The splashes on the trousers are applied in the same way, but be restrained with the clear varnish. Remember to add a few blobs of putty to the boots and ankles — mud clings to boots, believe you me!

If you want to make a diorama of Spanish and British figures in a group, the *Regt de Leon* fought alongside the 92nd (Gordon Highlanders) and the 1st/50th Foot at Vittoria. At Roncesvalles they fought with the 1st/3rd (Buff) and 1st/57th (Diehards) — exclusive company by any standards.

The article after next in this series deals with British line uniform of the period, but for those who can't wait the 50th, 3rd and 57th wore respectively black facings and paired square-ended loops; buff facings and paired square loops; and yellow facings with paired square loops.

Details of contemporary Spanish light infantry uniform are given in the caption to the accompanying photo. See also *Military Dress of the Peninsular War* under Fig 82, Plate 17, and Fig 90, Plate 18.



Centre company private of Spanish Light Infantry, 1812-14. The shako details are as described for Line troops. The coatee and trousers are azure blue piped and lined white. Some contemporary sources show facings of solid white, others areas of ground colour piped white, as here. Note characteristic straight-cocked Spanish musket, and the miniature flask slung as a canteen.

Napoleonic Wargaming

Playing tips for solo games by **Bruce Quarrie**

NOT ALL WARGAMERS, unfortunately, are lucky enough to have clubs or similarly minded friends in their locality. Play by mail is possible, though not usually satisfactory, and most people in this situation are forced to fight solo games. The big problem here, of course, is that you always know what your opponent intends. It is also very easy to begin favouring one side over the other and bending the rules to help them — even going so far sometimes as to throw an adverse die a second time in the hope of producing a better result!

This short article is therefore intended to help the many readers of my book, *Airfix Magazine Guide 4: Napoleonic Wargaming* (Patrick Stephens Ltd, £1.20) who do not possess a real-life opponent.

Achieving a balanced mixture of forces in the opposing armies is simple using the points system described here last month. Creating terrain which does not favour one side more than the other can only be achieved by being scrupulously honest with yourself, the problem here being that you usually end up with a very unrealistic table on which precisely the same features are duplicated on both halves of the playing area.

You can add variety by allocating a specific number of terrain features — say two hills, two houses and two woods — then mentally dividing your table into six squares, and throwing a die for each piece of terrain in turn. Whichever number comes up tells you where to place it on the table.

Obviously you don't put two identical features in the same 'square': if the die throw produces this result, throw again. But you could end up with one house, one wood and one hill all together in one square. Having finally settled your terrain, you allocate sides by the simple process of tossing a coin.

Laying down the troops in their opening dispositions is the next problem, one which wouldn't bother a computer but is difficult for a mere mortal, since no matter how impartial you try to be you do tend to favour one side over the other. On top of this, having made your plans for one force, and — presumably — having a pretty clear picture in mind of their objectives, it is difficult to position the second force impartially, ignoring your knowledge of the first army's intentions.

One solution which I have used with some success involves throwing a die for each unit and positioning it in — using the same system as for terrain features — whichever 'square' on each side of the table corresponds to the die score. This can lead to some really weird dispositions, however, and a compromise solution is to lay down

half of each army according to a plan and throw dice for the remaining units. This introduces at least a partial element of surprise and uncertainty into the beginning of the game.

The major problem with solo play though, as those of you who have tried it will realise all too well, is getting the same degree of surprise into the actual battle. What I do to achieve this is utilise a modified form of the Control rules, testing every unit at the beginning of every turn to see whether it obeys orders or not.

Taking the unit's basic control factor as laid down in the national characteristic tables, add or deduct points as follows, plus a throw of one average die and the leadership factor for the commander, if present.

For each enemy unit retiring within 300 yards +1; retreating +2; routing +4; standing -1; advancing -2; charging -4. Any enemy unit to own unit's flank or rear, add +1 to any of these. For each friendly unit retiring within 300 yards -1; retreating -2; routing -4; standing +1; advancing +2; charging +4. For each round of mêlée won by unit under test within last four Moves +1. For each Move within the last four in which the unit under test has been under fire (artillery or small arms) -1. Under fire from flank or rear -2. Unit is veteran + or -2 as required to give the best possible result.

Results: 2 or less — retreat for one Move, rally, then may not advance for two Moves; 3-4 — retire for one Move then may not advance for one Move; 5-6 — may not advance for two Moves; 7-8 — may not advance for one Move; 9-10 — carry out orders as planned; 11-12 advance if ordered to stand, charge if ordered to advance, for one Move; 13+ charge towards nearest enemy unit for two Moves.

Although this control system is somewhat unrealistic since most Napoleonic troops were reasonably well disciplined, it is about the only way (apart from using 'chance cards') of bringing an element of surprise into a solo wargame. Units ordered to hold a vital position may suddenly decide they're fed up with their assigned task and take it into their heads to charge the enemy; another unit ordered to charge may decide it doesn't like the look of the situation, and remain standing, or even retire; and so on.

Chance cards, drawn for each side at the beginning of each Move, or according to any other system you prefer to devise, can include such instructions as: 'Any friendly unit in a mêlée gets "blood lust" and adds +1 to its score'; 'Commander in Chief has stomach ache — no new order may be issued for two Moves'; 'All units under enemy fire deploy into line'; 'Any unit which has marched for three consecutive Moves is now "Tired"'; and so on. These cards can be as 'silly', or as carefully considered, as you like — a balance is probably best.

Obviously this short article can only skate over the surface of the possibilities open to solo wargamers, but I hope it will be helpful nonetheless. Next month I shall be dealing with some queries relating to skirmishers and mêlées which readers of my book have raised.

squadron codes and colours 1939-1956



By Michael J. F. Bowyer and John D. R. Rawlings

JU 111 Squadron (c)

Letters used from September 1939 until disbandment on May 12 1947. Used successively on Hurricanes, eg JU:K-L1823 used July-August 1940; Spitfire 1, II, VBs, eg JU:N-EP166; VCs, eg JU:N-EE810; IXCes (used June 1943 to May 1947), eg JU:V-MA538.

JU 446th Bomb Group, USAAF (c)
When 111 Squadron went overseas the letters JU were freed for home use, and were carried on B-24s of the 707th Bomb Squadron over the period December 1943-July 1945.

JV 6 Squadron (c)

Used September 1939 and almost continuously until 1946. First worn on Hardys, Gauntlets and Gladiators in Palestine, then Lysanders, Blenheims and Gladiators in the Western Desert from June 1940 then again in Palestine and most famously on the Hurricane IID tank-busters, eg JV:Z-BP188, and some IICs. Also worn on the squadron's Hurricane IVs, eg JV:S-KZ609; Spitfire IXs, eg JV:C-PT470; and Tempest VIs, eg JV:N-NX213.

JV Station Flight Finningley (c)

Letters used post-war as on Oxford JV:NM799.

JW 92nd Bomb Group, USAAF (c)
Letters carried by B-17s of 326th Bomb Squadron from January 1943. Worn by B-17Es, Fs and Gs.

JW Central Fighter Establishment (c)

Letters carried on Spitfire XIVs and IXs, eg JW:V-MK176 post-war when the Establishment was based at West Raynham.

JX 1 Squadron (c)

Letters used from September 1939 until 1950, successively on Hurricane Mk 1, IIA, IIC, eg JX:T-Z3455; Typhoons between July 1942 and April 1944, eg JX:L-R8752, JX:O-

MN242; Spitfire LF IXBs, eg JX:M-MK172 (a particularly smart and polished machine when recorded in April 1944 at North Weald); and on Spitfire 21s used May 1945 to October 1946, eg JX:G-LA217. Meteor IIIs used between October 1946 and August 1947; eg JX:B-EE458; and Meteor 4s (June 1948-September 1950); eg JX:E-VT284. Letters carried briefly on Meteor 8s in 1950, eg JX:E-VZ438.

JY No allocation known JZ 57 OTU (c)

No 7 OTU was formed at Hawarden on June 15 1940 as a day fighter OTU. Its unit letters seem not to be recorded. On December 28 it was re-numbered 57 OTU and by then was flying Spitfires. It moved to Eshott on November 10 1942 also taking up residence at the satellite Boulmer the same day where the JZ element resided. Unit closed June 6 1945. Used Master IIs and IIs, but mainly equipped with Spitfire Mk 1, II, VB, eg JZ:X-AD765. Later used letter/number identity, eg JZ:20, JZ:26.

J2 479th Fighter Group, USAAF (c)

Letters carried on P-38s and later P-51s of the 435th Fighter Squadron May 1944 to November 1945.

J3 458th Bomb Group, USAAF (c)
Letters carried on B-24s of 755th Bomb Squadron February 1944 to July 1945.

J4 458th Bomb Group, USAAF (c)
Letters carried on B-24s of 753rd Bomb Squadron February 1944 to July 1945.

J5 3 Squadron (c)

Unit coding JF became J5 after the war on the squadron's Tempests, eg J5:W-NV926. Received Vampire 1s in April 1948, eg J5:M-TG391 and FB Mk 5s in May 1949, eg J5:A-VV532. Letters relinquished in 1950.

J6 1521 Radio Aids Training Flight (c)

Letters worn by Oxford 1945-46.

A line-up of Spitfire IXs of No 111 Squadron.



Continued on page 524

The F-15 Eagle, described as the "best, most manoeuvrable fighter ever built" is the first pure air superiority fighter to be developed for the USAF since the F-86 Sabre of 1948. High performing, heavily-armed, agile enough to perform 5g turns which would rip most aircraft to pieces, the F-15 has been designed to fulfil one specialist role: to rule the skies during the late seventies and early eighties. In simple terms, a dogfighter.



First requirement for a new air superiority fighter came from the USAF in 1965. Known first as the FX project, McDonnell-Douglas won the formal design competition and Pratt and Whitney the contract for the turbofan power units. Air superiority requires a combination of performance, avionics and weaponry, and McDonnell-Douglas made some 500 design studies of features for the aircraft. High speed agility was of prime importance. The need to save on weight, cost and complexity ruled out a variable-geometry layout, but twin engines were adopted for survivability. Multiple control systems will keep the F-15 fighting in the face of battle damage, and the engine is module-built to allow for rapid repair. Off-the-shelf avionics have been used wherever possible, and flying controls have been kept simple.

Main weapon for the F-15A is a General Electric 20mm Gatling gun mounted in the right hand wing root. The new Philco-Ford 25mm gun — 6,000 rounds per minute! — will be fitted to the second Air Force wing. Missile armament is a mix of 8 Sidewinders and Sparrows and the Navy's new Agile may be adopted later. Just as important as

the impressive array of weaponry itself is the Hughes APG-63 "dogfighting" attack radar which gives the pilot a continual flow of information and calculations for air-to-air combat.

The USAF has made some proud claims for the F-15. They say it will out-climb, out-maneuvre and out-accelerate any MiG now or in the next decade. In simulation exercises against a MiG-25 Foxbat the Eagle has proven superiority with either gun or missiles. Even assuming that Soviet missile technology is further advanced, the F-15's manoeuvrability will still give it a clearly-defined edge.

The Eagle made its first flight at Edwards Air Force Base on July 27th 1972 and by the end of 1973 eleven were involved in test flight studies. Fully operational deployment should be attained during 1976. The Eagle, with its smooth flat surface area painted "air superiority blue" looks every inch a lethal weapon. The dogfighter has returned.

Revell's superbly detailed 1/72nd scale F-15 Eagle Kit makes the most of this stunning new dogfighter. The finished model stands over 10 1/2" long with a wing span of over 7". Full-realism details include removable Pratt & Whitney Turbofan engine. Opening clear canopy reveals cockpit instrument panel, control stick, pedals and ejection seat. To complete the kit optional position landing gear with movable wheels, speed brake, four sparrow missiles and full colour USAF markings. Add the Eagle's air superiority to your collection.

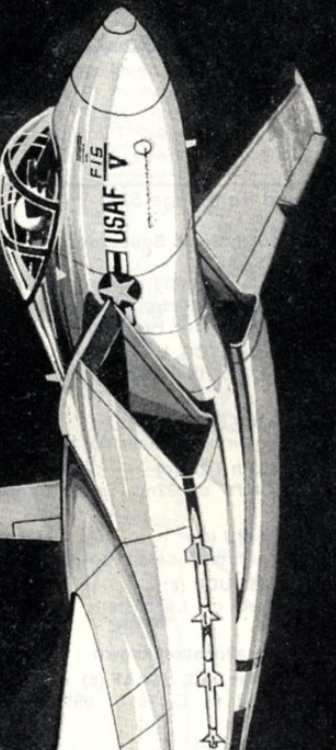
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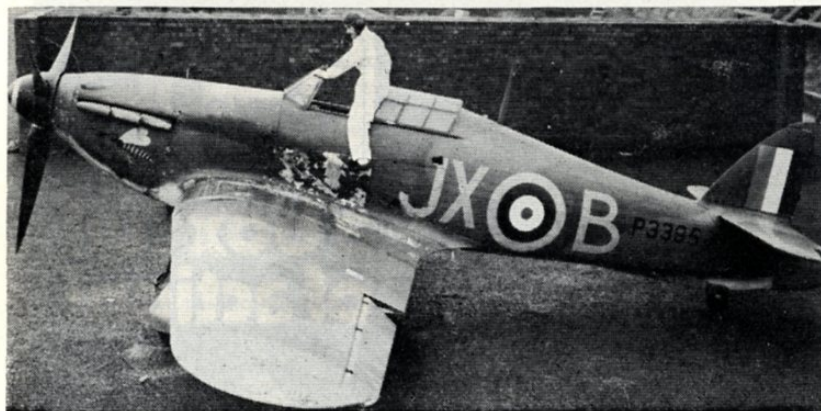
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Hurricane 1 P3395 after being earmarked for France joined No 1 Squadron in June 1940 and served with it until November 1940. Between February and April 1941 it was used by No 55 OTU then passed to No 5 Flying Training School in whose hands it was written off in a flying accident on March 25 1942. The pilot when the machine was with No 1 Squadron was usually Flying Officer A. V. Glowes, DFM (IWM).

Continued from page 522

J6 406th Bomb Squadron, USAAF (c)

Used on B-24s from July 1944 by this Night Leaflet Dropping Squadron which operated from Cheddington and Harrington.

J7 442nd TCG, USAAF (c)

Used on C-47s of the 303rd Troop Carrier Squadron.

J8 8 MU (c)

Allocation confirmed, details not known.

J8 439th TCG (c)

Used on C-47s of 92nd Troop Carrier Squadron.

J8 24 MU (c)

Allocation confirmed, details not known.

J9 1668 UCU (c)

Letters carried on Lancasters, eg J9:M-HK741.

2J No allocation known

3J 441st TCG, USAAF (c)

Letters carried by C-47s of 99th Troop Carrier Squadron.

3J 13 MU (c)

Letters carried post-war by an assortment of aircraft types, eg Oxford 3J:B-EB969; Tiger Moth 3J:T5702; Halifax VI 3J:F-RG872;

Dakota III 3J:KG311.

4J 442nd TCG, USAAF (c)

Letters carried by C-47s of 305th Troop Carrier Squadron.

5J 126 Squadron (c)

Adopted April 1944 when the squadron returned from the Middle East. Disbanded April 26 1946. Aircraft used: Spitfire IXBs April-December 1944, eg 5J:F-MK660; Mustang IIIs used December 1944-April 1946, eg 5J:J-KH526, and in 1946 on some Spitfire 16Es.

6J 34 Squadron (c)

No 695 Squadron became 34 Squadron in March 1949. It disbanded November 1952 having served as an anti-aircraft co-operation squadron at Horsham St Faith. Equipment included Oxford 6J:E-PH467 used both by 695 and 84 Squadrons March 1948 to June 1950.

7J No allocation known

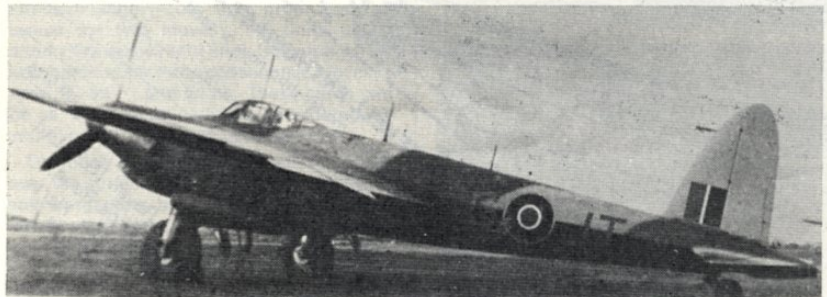
8J 435 Squadron (c)

Allocation confirmed but no details of use.

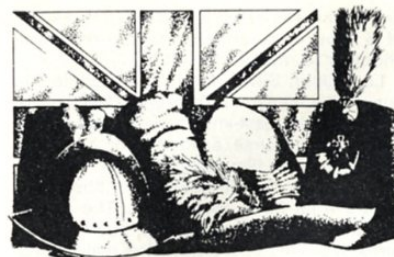
9J 227 Squadron (c)

Letters used after the squadron reformed following service in the Middle East October 7 1944. Equipped with Lancasters and disbanded September 5 1945. Example used 9J:H-NN778. □

Mosquito XII HK229 was delivered as a Mk II to Marshall Flying School in June 1943 where it was then converted into a Mk XII. No 256 Squadron received it in July 1943 and took the aircraft overseas in September. It was busily employed in the Middle East in a night fighter role (note the black under surfaces) and eventually struck off charge March 29 1945 (Ron Clarke).



A battalion company officer carrying the half pike. Inset the sword hilt and net sash. Swords were still being privately made and the hilts varied considerably at this time.



20th Foot circa 1749 by Bryan Fosten

THE REGIMENT, which was later to become the Lancashire Fusiliers, was raised in 1688 as Sir Robert Preston's Regiment of Foot.

In 1691, as Gustavas Hamilton's Regiment, the officers wore scarlet coats lined with scarlet and laced with gold for the field officers and silver for the subalterns.

In 1749 the regiment was commanded by the Earl of Albermarle and in 1751 became the East Devonshire Regiment. It served at the siege of Quebec in 1776 and was later interned at Saratoga.

The 1742 book and Millan's list both indicate red faced dark yellow with silver lace for the officers, and Morier's painting circa 1751 show the same uniform with square ended white lace with a black stripe along each edge and two red stripes. The grenadier is shown with red waistcoats and red breeches.

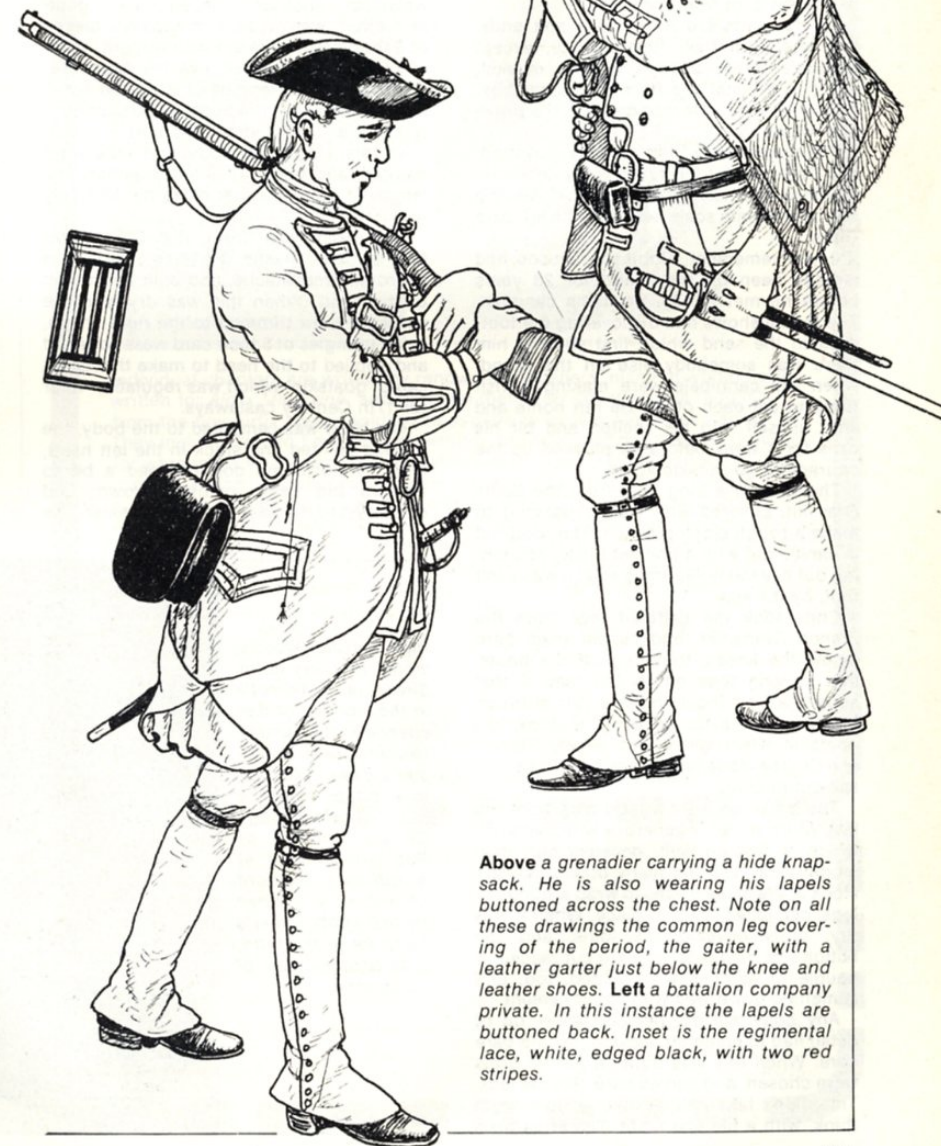
The grenadier caps were fronted with dark yellow and the white 'GR' cypher with the Royal Crown in proper colours above and with white palm sprays on either side. The back of the cap was red with white pipings and a yellow turn-up bearing a grenade with '2' on one side and '0' on the other, flanked with palm sprays. The little red flap on the front was lettered with the ubiquitous 'Nec Aspera Terrent' with the white springing Hanoverian horse beneath. The cap tuft was white. Grenadiers had red wings on their coats with regimental lace decoration.

We are lucky that Wolfe had his portrait painted as a Lt Colonel of this regiment. He carries a black cocked hat in the 'Kevenhuller' style edged with wide silver lace. His coat is scarlet with dark yellow (almost buff) lapels, cuffs and waistcoat. The neck of the coat is edged silver and the lapels also trimmed with wide square-ended silver loops. The dark yellow silver edged cuffs have long red cuff flaps with a silver edging and silver lace looping. No doubt the coat also had silver edging to the pocket flaps in the skirts and in the back vent. The facing colour waistcoat was also edged silver and had silver button hole loops with square ends.

The breeches would be white and worn with either long buttoned gaiters or black 'jockey' pattern boots with fawn cuffs and drawstrings. Officers wore crimson net sashes over the right shoulder with the tassels hanging on the left hip. The sword was worn on a waistbelt under the coat and over the waistcoat with the hilt of the sword protruding through the left side slit. The portrait of Wolfe by Highmore shows him wearing a small tight powdered wig with frizzing over

british army uniforms 1660-1900

the ears. Half pikes were carried by battalion company officers and fusils by the grenadier company officers. □



Above a grenadier carrying a hide knapsack. He is also wearing his lapels buttoned across the chest. Note on all these drawings the common leg covering of the period, the gaiter, with a leather garter just below the knee and leather shoes. Left a battalion company private. In this instance the lapels are buttoned back. Inset is the regimental lace, white, edged black, with two red stripes.

And now for something . . .

. . . completely different! Modelling fictional figures from Airfix parts by Ron Wood

CHRIS, MY WIFE, wanted to try making some figures, as a change from the aircraft she usually concentrates on, but she wasn't interested in soldiers. But she had just finished *Robinson Crusoe*, and thought a 54 mm castaway would be fun. Then Long John Silver suggested himself, and these two figures were created. Chris had never made any figures before, so these are first attempts. She enjoyed making them, and she learnt a lot from them.

All the parts are Airfix odds and ends, leftovers from their figure range, except Crusoe's rather ancient looking musket, which is a metal one from the spares box. Neither of us can remember who the previous owner was.

The dog was 4p from our local toyshop, and Captain Flint the parrot is scratch-built. Anybody who hasn't tried scratch-building a parrot at 54 mm scale has missed a lot, says Chris.

If you remember, Robinson Crusoe had already been on the island for 23 years before he met Friday, the tame cannibal. The model shows him discovering the footprint in the sand which first showed him there was somebody else on the island, when the cannibals were making a visit there to eat each other. He ran home and shut himself into his shelter, and bit his nails for a week before he plucked up the courage to go outside again.

The base is a long one, from the Scots Grey kit, covered with plastic padding to make a rough sloping beach. The footprint is carved out with a pointed blade, scratching out five toe holes and a sole. It was a left foot, by the way.

Chris took the gaitered legs from the French Grenadier, and carved them bare below the knees, trimming off the boots, and carving toes on to the feet. If that sounds a bit difficult, make a pair of rough boots with plastic padding, to look like goatskin, which was of course what Robinson Crusoe made his clothes out of when he ran out of cloth.

The breeches were 5 thou card from the kits. Airfix are fairly generous with this stuff, which is just as well, because our local model shop, like too many others, doesn't stock it. We made pieces to wrap around the legs, cemented them in place. When it was dry, putty covered the joins, and the bottoms of the breeches were cut ragged. A couple of patches were added, too, and cemented down well with liquid cement.

Any body will do, because every bit of detail had to come off, leaving just the bare core. When this was done, a pair of arms were chosen, and carved bare, like the legs. This didn't take half as long as you might think, with a file and knife. The arms were

then cemented to the body in the right positions. The musket was tried out in the hand at this stage, and the body tried out on the legs, which were already stuck to the base. We had to file the body a bit to make it lean forward.

When this had set thoroughly, Chris built up the sleeves of the shirt, simply by putting a ring of putty around each arm above the elbow, to make rolled-up sleeves. Then the waistcoat, another Crusoe-cobbled goatskin effort, was made from separate pieces of 5 thou card, softened with cement, stuck in place, and patched like the breeches. Some crisscross lengths of stretched sprue made the times at the front. (Male superiority! Chris still can't stretch sprue!)

At this stage, the body and legs were painted, and then cemented together. The length of the waistcoat hides the join very well.

The head was from the Coldstream Guardsman. Plastic Padding made the beard and moustache, and built up the top of the head. When this was dry, and the whiskers were trimmed to the right shape, small triangles of 5 thou card were softened and applied to the head to make the 'Great cap of goatskin' which was regulation wear for 17th Century castaways.

The head was cemented to the body, the musket painted and stuck in the left hand, and the polythene dog trimmed a bit to remove the flash, painted brown, and cemented to the base next to its master. The

final detail was a sword, cemented to a sling of 5 thou card, and hung over the right shoulder to rest on the left hip.

Long John Silver, the rather likeable villain of Stephenson's *Treasure Island*, must be one of the best-known characters in fiction. And of course, anybody who has seen Walt Disney's film, with Robert Newton looking suitably fierce in the title role, knows what Silver looked like. The model was tremendous fun to make, again out of Airfix bits. We had a bit of a job making the hat, but now, of course, the American Soldier of the Revolution has a head and hat which could be used with no alteration at all.

Silver, you remember, led his treasure-seeking pirates to the spot, only to find the loot gone, thanks to Ben Gunn, the maroon. (If you haven't read the book or seen the film, of course, this will mean nothing to you!). So we modelled Long John looking into the hole, now containing only the empty chest and discarded tools.

First, the hole. I found a thick piece of card, and built the chest on this, out of card scored to represent planks, and bound at the corners with paper strips.

Next, a large, rough hole was cut in a long base, and the card with the chest on it was cemented underneath, so the chest stuck out of the hole. The ground was then built up with Plastic Padding, and if you can build up a hole, the hole was built up, too. Some odd planks with 'Walrus' written on them were scattered about, and a pick and shovel, from a Tamiya military kit, were left lying around in the hole.

The figure was again a mixture of bits from other kits. The leg was a gaitered one from another Grenadier, trimmed this time to represent knee breeches and stocking and shoe. The stump of the missing leg was sawn from the other kit leg, filed round at the end, and then the two legs, or the leg-and-a-bit, were stuck together.



The two body halves from the same kit were stuck together, and all the detail was filed off the back, leaving just the tails hanging smooth, to form the basis for the coat skirts. These were made from 5 thou card, and when they were in place and dry, they were filled and smoothed with body putty. The front of the coat was then smoothed, and a false front made and stuck on. The sketches should give you the right idea. The joints were sanded down and filled, and then the arms were stuck on. These came from the Coldstream Guard kit without any alteration, except that the left hand had to be cut off, and then filed and stuck on again in the right position to hold the crutch, which was a piece of plastic rod, with a card crosspiece at the top. Chris left it oversize, and then cut it to the right length when she assembled the body to the legs on the base.

A hole was drilled at this point in the left shoulder, to take the parrot. The head, in our case, came from another Coldstream Guard. (I bet you're wondering how we manage to build so many kits and have the heads left over!) The hat was a disc of thin card stuck to the flat top, and then curled up to make a tricorne hat, the crown of which was stuck on afterwards.

Long John Silver should be armed to the teeth, so we had a rummage through the spares box, and found two pistols from the Scots Grey, and these we gave him, one in his hand, and the other stuck in his belt, with a sword. If we'd had another musket of the right period, this could have been slung over his shoulder, but all the muskets we

Continued on page 528

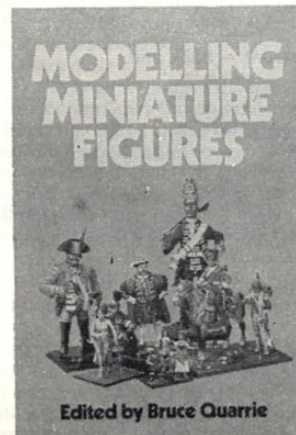
Right Christine Wood's model of Long John Silver (and parrot!) at the moment of discovering the empty treasure chest. Some-one's been indulging in a bit of yo-ho-ho . . . Facing page Chris's model of Robinson Crusoe at a different moment of discovery - when he first spots Friday's footprint in the sand, plus another view of Long John.



The first detailed book on the subject! No figure modeller dare ignore it . . . Modelling Miniature Figures

Edited by Bruce Quarrie

No other publication on this subject has gone into such detail about the different scales, materials and techniques that can be used when modelling, converting and animating model soldiers and other miniature figures.



Individual chapters are written by renowned modellers, many of whom have written for *Airfix Magazine*, and between them they cover figures ranging from the tiny Airfix plastic soldiers to expensive large-scale metal pieces. They include Donald Featherstone writing on metal casting (a useful process for wargamers who need lots of small figures), Martin Rendall on wood carving (a technique that may be new to many modellers), Roy Dilley on making the realistic dioramas for which he is famous, and Sid Horton on Airfix figures (of course!). The book is profusely illustrated with photos of figures under construction and finished, as well as line drawings showing specific conversion techniques and examples. Lists of manufacturers and their addresses, accessories, societies, and books for further reference make this an invaluable purchase for anybody making model figures in any scale. 152 pages, 9" x 6" (228 x 152 mm), 88 photos and 119 line drawings. £3.75 net (£3.98 by post)



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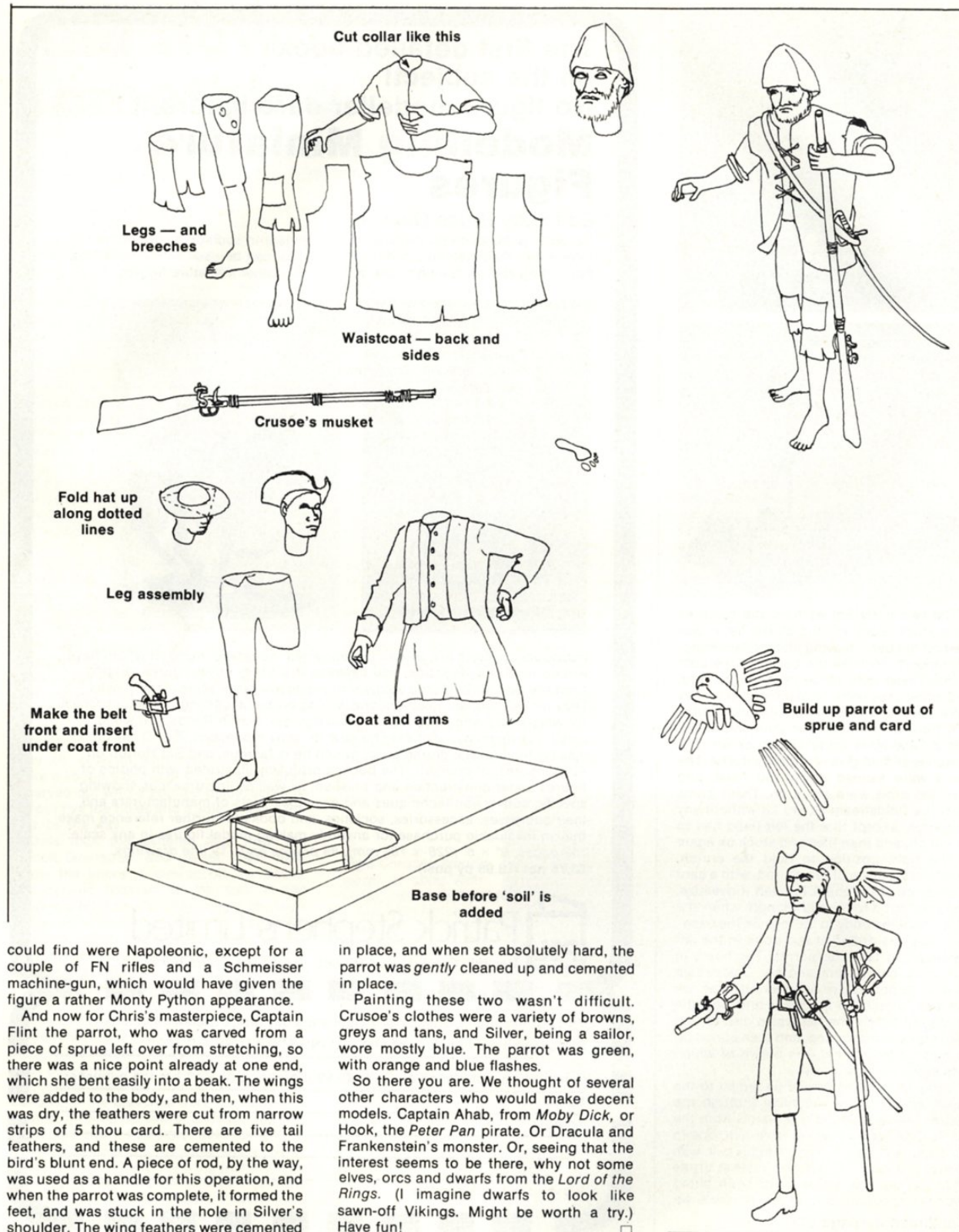
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could find were Napoleonic, except for a couple of FN rifles and a Schmeisser machine-gun, which would have given the figure a rather Monty Python appearance.

And now for Chris's masterpiece, Captain Flint the parrot, who was carved from a piece of sprue left over from stretching, so there was a nice point already at one end, which she bent easily into a beak. The wings were added to the body, and then, when this was dry, the feathers were cut from narrow strips of 5 thou card. There are five tail feathers, and these are cemented to the bird's blunt end. A piece of rod, by the way, was used as a handle for this operation, and when the parrot was complete, it formed the feet, and was stuck in the hole in Silver's shoulder. The wing feathers were cemented

in place, and when set absolutely hard, the parrot was gently cleaned up and cemented in place.

Painting these two wasn't difficult. Crusoe's clothes were a variety of browns, greys and tans, and Silver, being a sailor, wore mostly blue. The parrot was green, with orange and blue flashes.

So there you are. We thought of several other characters who would make decent models. Captain Ahab, from *Moby Dick*, or Hook, the *Peter Pan* pirate. Or Dracula and Frankenstein's monster. Or, seeing that the interest seems to be there, why not some elves, orcs and dwarfs from the *Lord of the Rings*. (I imagine dwarfs to look like sawn-off Vikings. Might be worth a try.) Have fun!

Re-arranging the Avenger

Conversions from the Airfix kit described by Alan W. Hall

THE GRUMMAN AVENGER, like its successor the Skyraider, had many variants. Apart from its original torpedo-dropping role, the aircraft was converted both by the manufacturers and by those that used it for radar, search and airborne early warning duties. Other than this they were converted into target-towing aircraft or even as seven-seat passenger transports.

The main role of the converted Avengers was, however, in the anti-submarine business. Started by the Royal Canadian Navy and converted by the Fairey Aviation of Canada company, a number of ex-US Navy TBMs had the rear turret removed and extra radar equipment installed. The Royal Navy had 180 Avenger AS4s and 6s. These, too, had the turrets removed and a radar bulge let into the underfuselage position in the forepart of the bomb bay.

Other countries using converted Avengers were the Dutch, French, Italian and Japanese Navies whose aircraft all seemed to have slight modifications from each other.

As many of the 9,834 Avengers built were produced by Eastern Aircraft Division of General Motors, they had the TBM designation rather than the TBF of the parent company. The former were selected for conversion so that the three basic alterations were named TBM-3S, TBM-3R and TBM-3W2. The target-towing version became known as the TBM-3U.

Graded conversions

The delight in converting the Avenger, and incidentally in writing an article about it, is the fact that the various modifications made to the basic airframe are such that there's a fairly easy one, a more difficult one and a hard conversion so that whatever your standard you can try at least one of

Being a devil for punishment, but needing an Avenger with a guppy radome to go with my earlier Skyraider conversion, I chose to make the TBM-3W2 which had the large APS-20 radar bulge under the fuselage. This, incidentally, is the same radar that equips the present day Shackleton AEW2 aircraft of No 8 Squadron and although still very much operational equipment is in fact over 20 years old!

The TBM-3W has an entirely different rear part to its canopy and the under fuselage turret removed. Other conversions do not need the latter modification so are therefore relatively easier to do than the one I started. This involves major surgery and by the time the various parts have been cut away from the basic fuselage there's not much left.

Conversion kits

Since writing my last series of conversion articles for *Airfix Magazine* almost three years ago, the availability of modification kits from the vacu-form manufacturers has trebled and now there are few of the more interesting conversions left that do not have a kit from which to take the parts.

I'm as lazy as the next man and therefore chose to use the very useful parts supplied in the Airmodel conversion kit No 304. This supplies all of the pieces needed for the three main variants of the Avenger and also parts for the AD-4W Skyraider as well. Those wishing to convert the Frog Shackleton into the AEW2 will find the guppy radome suitable as it saves much hard work in making a wooden one.

The Airmodel kit costs a mere 60p which I reckon is good value. The main importers are Argyle Models in Scotland but they can also be obtained from other leading advertisers in this magazine.

Unfortunately the instruction sheet that

comes with the kit does not go into great detail on how the work should be done. It identifies the various parts, both in clear acetate sheet and polystyrene, and gives a few illustrations of markings, but that's not all. For the beginner, therefore, it is essential that a lot more information be available or otherwise, as we know from experience, a youngster may give up before he's properly started and miss the pleasure and satisfaction of making model conversions.

Only the basic tool kit of files, a saw, wet and dry paper and a decent workbench are required but I do advise buying a tube of contact adhesive for sticking the cockpit canopies in place. This was not necessary in doing the guppy version, described here, but any of the others will need this essential commodity.

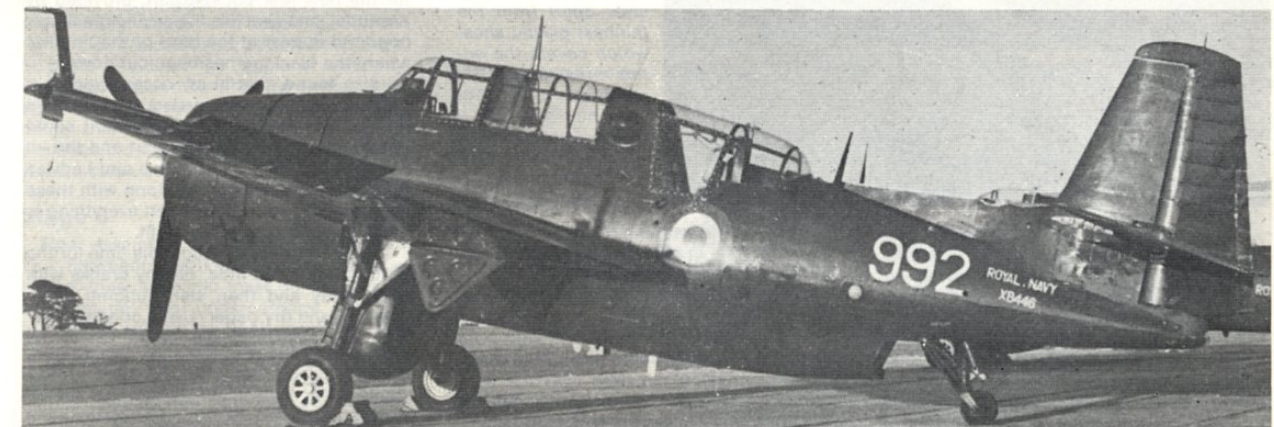
The easiest way to describe the way in which the model was made is to divide the operations up into stages as follows:

Stage 1

The preliminary work is described in the kit instructions by Airfix. These are simply to assemble the cockpit parts (2, 3, 4 and 5) and painting the interior predominantly black before leaving the parts on one side to dry. Contrary to the kit instructions we did not put the tailwheel in at this stage. There's a very good reason for this, as with the amount of work needed on this under fuselage area, the complicated and delicate parts of the tailwheel assembly could get broken or at least covered in body putty. I found it best to cut the locating pins off and assemble this section much later.

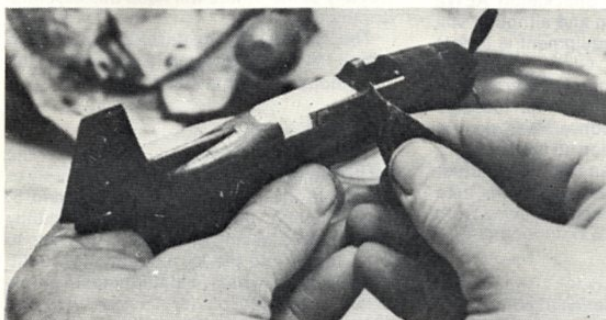
Both fuselage transparencies are added to each side of the fuselage using Mek-Pak as an adhesive. The oval transparency will be filled in with body putty later on and acts as a good base. Similarly the tail hook is not assembled as this fits outside the fuselage and is not an internal fitting as in the basic Airfix kit. All upper and lower turret parts are, of course, discarded.

Royal Navy Grumman Avenger AS.6 seen at Culdrose. The Airmodel conversion kit contains all the necessary parts to make this model, including the RN's exclusive smaller radome mounted under the fuselage.





The first stage in the conversion. Here the fuselage has been assembled and the Airmodel parts are being cut out and prepared.



Rubbing down the top fuselage after cutting down the rear hump, squaring off the turret hole and filling with scrap plastic card.



The entire underside of the fuselage is cut off from the gunner's position to the cowl. The radome is being checked for width against the fuselage contour.



Building up the underside of the fuselage with plastic strips of different widths. The area where the radome fits is left clear apart from the thinnest plastic sheet which covers the entire area previously cut away.

The wings were also assembled at this stage. It is here that one probably becomes aware of the prodigious number of rivets on this kit. The Avenger was produced during Airfix's fascination with rivets period and although these are strictly accurate in their placing certainly need rubbing down! The fuselage will be well attended to during the construction work that has to take place but the wings do not get the same attention. It is

therefore worth keeping this job handy, for it can be done in odd moments whilst waiting for something to dry out.

Before sticking the parts of the wings together it is best to fill the locating pins of the rocket rails in the lower half with body putty. Just squeeze some through from the inside by placing the tube over the hole. When dry the little stub that protrudes can be cut off and the excess rubbed down.

Stage 2

The cutting out of the parts from the Airmodel kit can now begin. To do this score round each part with a sharp knife having a robust blade. There's no need to cut the part out completely — simply score it round and then break off the unwanted material. If your knife is sharp you'll make a deep enough cut on the first scoring round of the part for this to be done easily. Next rub the parts down so that areas and edges which will have to have glue applied are flat. A large sheet of wet and dry paper can be used for this, laid flat on the work surface or pinned to a board. A circular rubbing motion gets the parts down evenly — and remember to use enough water.

Out of the various parts supplied in the vacu-form kit we need the radome and the rear cockpit parts, and of these only the radome needed assembly at this stage. Again Mek-Pak is easier to use than polystyrene cement as it flows along the joint easily and dries rapidly.

Leave the radome on one side to dry and rub down any joint line when convenient. Cut off the forepart of the vacu-formed rear cockpit and rub this down. Its assembly does not come until later but the preparation can be done now.

Stage 3

Attention then returns to the fuselage. Here both the top and underside parts need a lot of work-time and patience. I started on the top first. All of the upper fuselage aft of the pilot's cockpit has to be levelled off and the turret hole filled in. To do this I used a fret saw to remove the hump aft of the turret, cleaned this up and then squared off the depth of the turret area by cutting the sides down with a knife. A thick piece of plastic card, taken from the scrap left over from the Airmodel kit, was then cut to fit the squared shape left. This has to be positioned so that when rubbing down, to return the fuselage contours, no sunken area is left. This is a fiddly job to do and must be done accurately or there will be much more filling to do later.

When complete a much thinner piece of plastic card (less than half the thickness of that in the fuselage sides) is cut to fit along the top of the fuselage. This provides a base for the new rear cockpit part, provided by Airmodel, and also fills the small hole that is bound to appear at the base of the fin fillet where the fuselage has been cut down.

I also found, that in my case, a very thin piece of plastic was needed at the pilot's cockpit end along the cockpit rim. I could not match up the Airmodel part and the kit canopy accurately without this and I advise that constant checking be done with these two parts to ensure that when everything is finally rubbed down they all fit.

After waiting for a reasonable time for the parts to dry out a little, fill any cracks with body putty and then start rubbing down with wet and dry paper. Use a coarse paper first, and possibly a file, to get rid of the major bumps and lumps, and then with a much smoother, finer grade finish off the contours so that the rear canopy will fit flush and snugly into the area. Don't stick it

on yet. Wait until the underside of the fuselage has been finished before doing that, otherwise the new part will get in the way during the major surgery that now has to take place on the underside of the fuselage.

Stage 4

Again with the fret saw remove all of the underside of the fuselage from the gunner's position to the engine cowl. Clean this up and then with the thinnest of the two grades of plastic card fill the whole area in from nose to tail. On top of this progressively stick thicker pieces of smaller width making up the contour again. Leave the forepart where the radome fits as this has to go into the bomb bay area and the rear end can be shaped to overcome the new fuselage section.

Cover the whole area with a liberal coating of body putty and when dry give this a rough rubbing down. Then stick the radome in place without worrying too much about the fit at the rear end and once again use the body putty to build up the final contour. This totally changes the under fuselage shape and the cross section will have to be replaced with a lot of filing and work with coarse wet and dry paper. The oval transparencies in the fuselage sides can be filled at this stage ready for final rubbing down. Complete the job by coating the whole area with a final filler of talcum powder and clear dope mixture and allow to dry.

Next stick the rear part of the cockpit canopy in place and fill the cracks with dope and powder mixture. The whole model should now be ready for its final rubbing down. Spend a lot of time and patience on this as what happens now will make or break the standard achieved when the paint is applied. Remove any other rivets that might be showing up rather badly such as those on the forward fuselage below the canopy and on the fin and rudder.

Stage 5

The last job to do before final assembly is to add the auxiliary fins to the tailplane. I let these into the latter by making a cut with the fret saw in the appropriate position back to the line of the elevators. You will have to cut the fins themselves from the thickish scrap plastic left over from the Airmodel kit and rub them into an aerofoil shape by rounding the leading edges and tapering off the remainder. Mek-Pak was used to keep them in place and then the tailplane assembly was fitted. Remember that the rivets, here, also have to be rubbed down. Take care in doing this however, as the lines on the elevators must not be removed as these are about scale size.

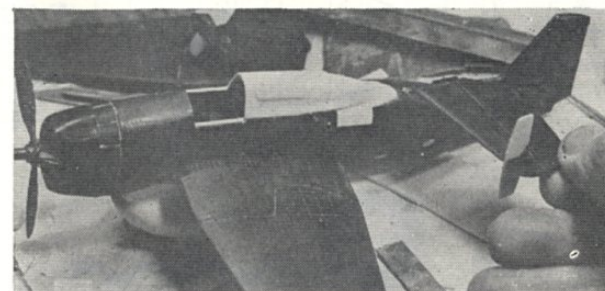
Stage 6

Final assembly of parts can now begin. The tailwheel mentioned earlier, can be added, there's a radio mast on the rear of the cockpit, the undercarriage can be assembled and the tail hook converted. The latter can be stuck onto the fuselage underside and a piece of scrap sprue filed into shape for the housing. If the earlier work is satisfactory (and this is where accuracy

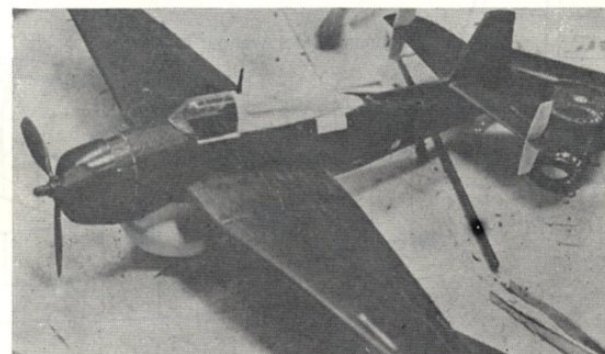
The radome has been stuck in place and the contours built up with body putty. These, after rubbing down, are covered with a talcum powder and clear dope mixture.



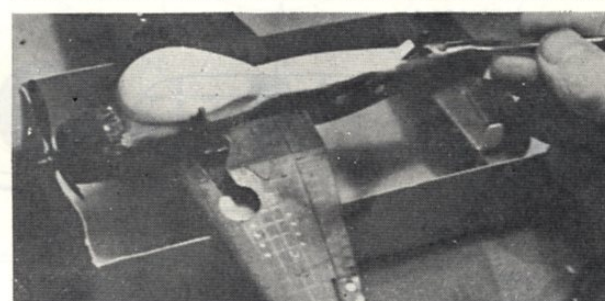
Assembly of the auxiliary fins on the tailplane. These were let in by a saw cut and made from plastic card left over from the Airmodel kit.



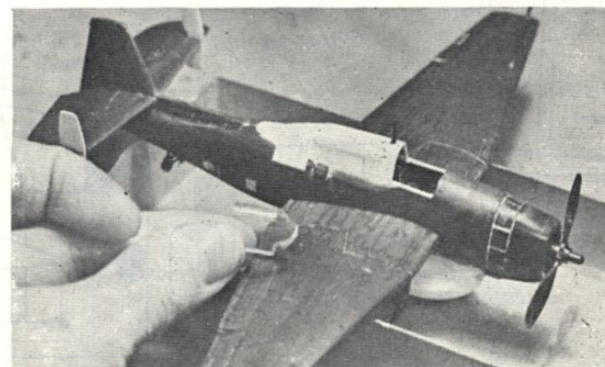
The Airfix kit canopy is cut down to fit the front part of the cockpit and the wings and tailplane stuck in position.

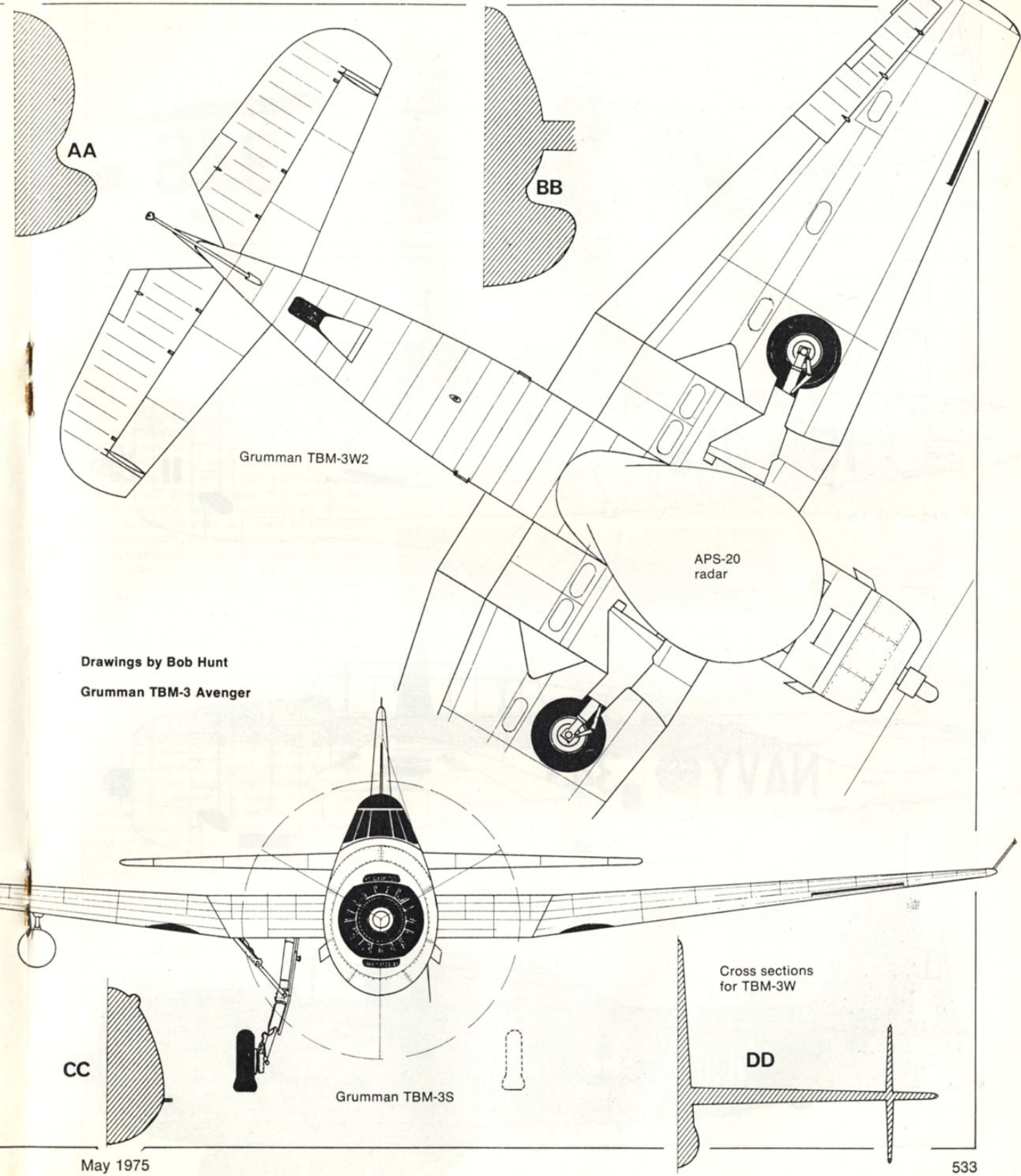
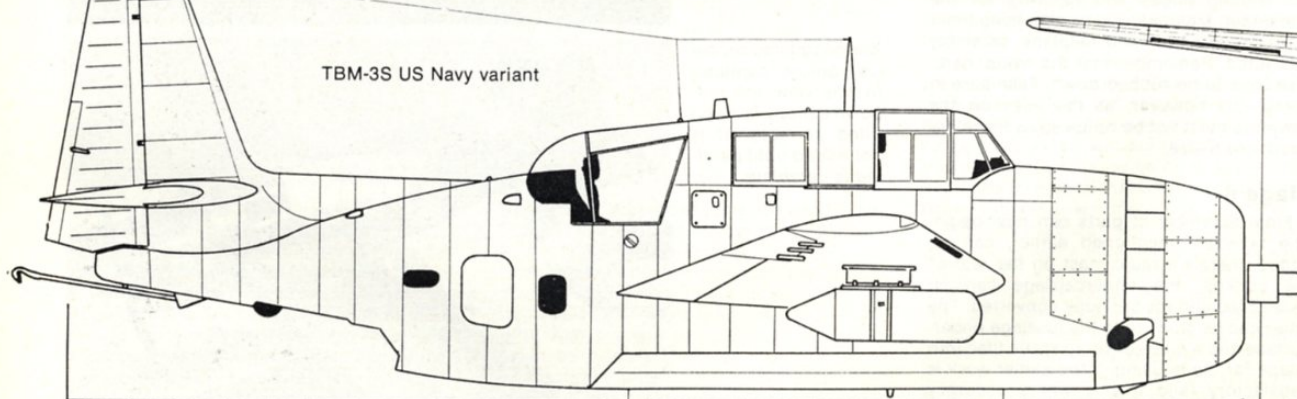
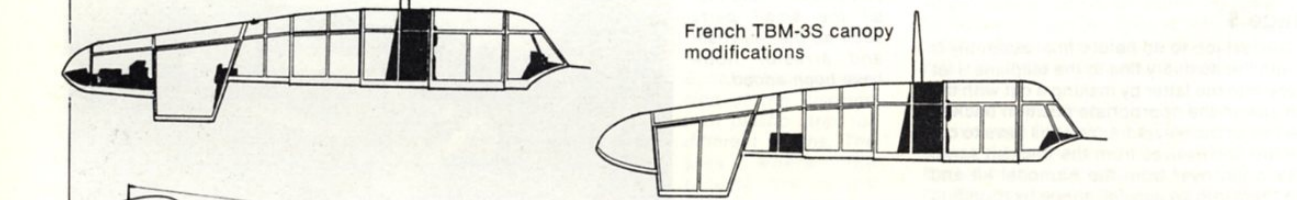
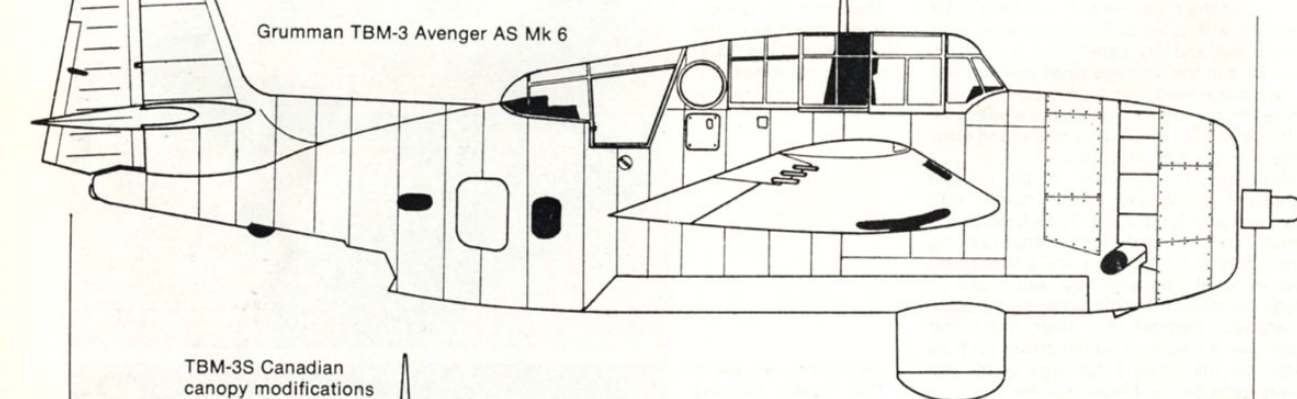
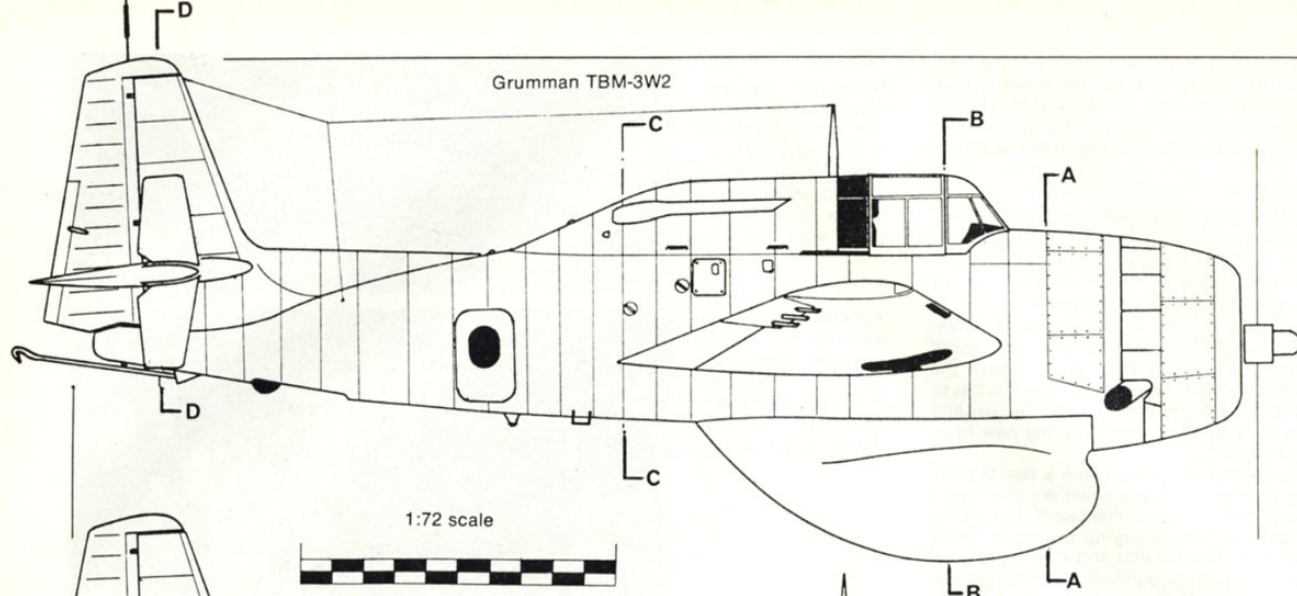


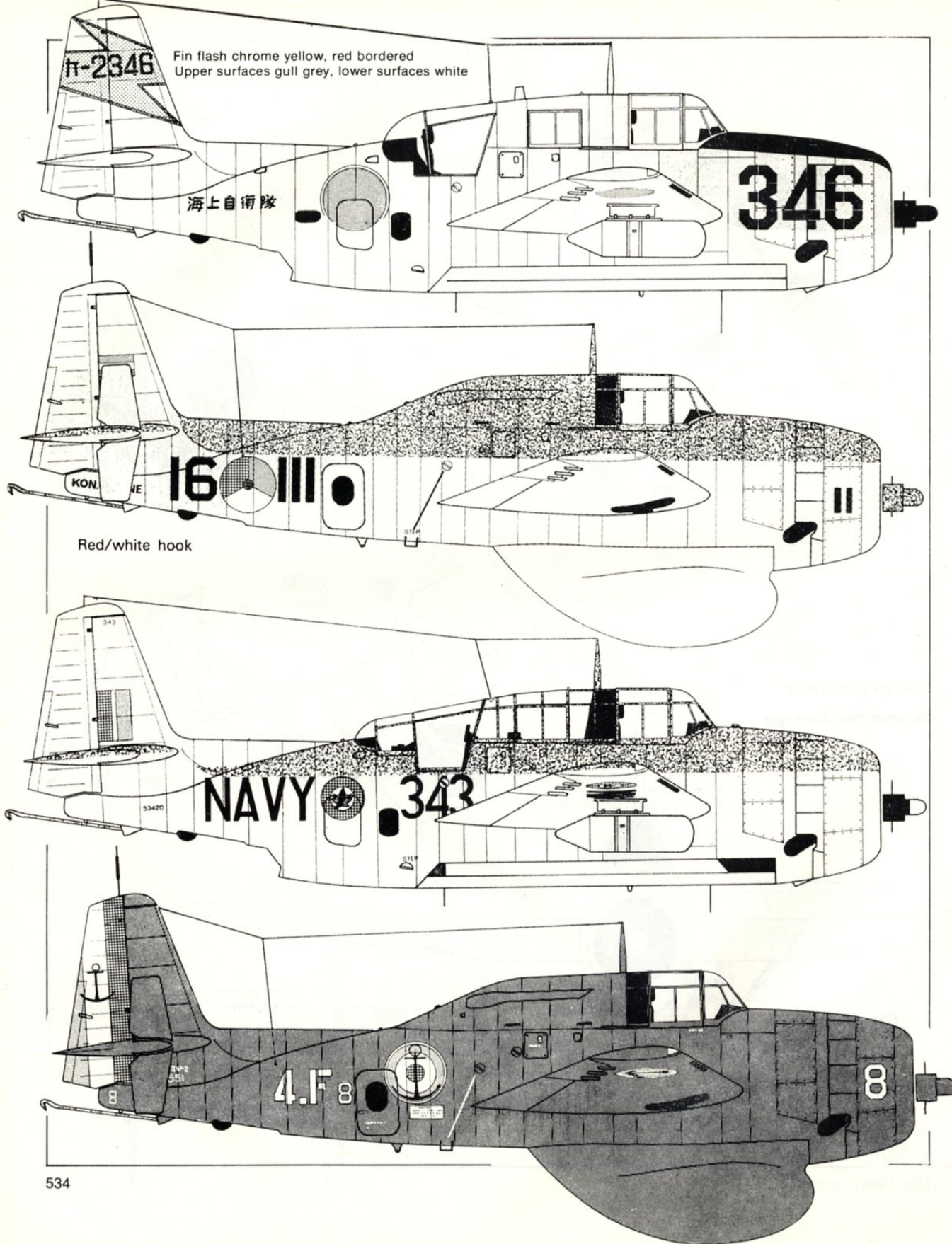
An underside view of the model nearing completion. Note that all the small parts such as the tailwheel and arrestor hook have been added.



The completed model just before painting. In this view the cut-down canopy is being fitted correctly. It is not added until painting is complete.







Key to drawings. Top to bottom JMSDF TBM-3S in light gull grey and white scheme with black Japanese characters and digits. RNNAS TBM-3W as modelled. Enough TBM-3s and 3Ws were obtained by the Dutch in 1953-4 under MDAP to equip two squadrons. This machine served aboard the carrier Karel Doorman. Canadian machine showing the last scheme worn by their Avengers including the word 'Navy' and number flanking the roundel. French TBM-3W of Flotille 4F based at Karoubla.

comes in) you will find that the undercarriage legs will just fit round the radome. They were a close fit even on the full-scale aircraft and I found that the same applied to the model.

Painting

The simplest colour scheme would be that of the dark gloss blue used by the US Navy or the French Aeronavale. US Navy markings are fairly easy to find in the spares box but the Aeronavale ones were not, so I compromised by painting my aircraft as a Royal Dutch Navy example. The standard colour scheme of extra dark sea grey and sky were applied with a little varnish added to the matt paint to give the semi-gloss finish essential to post-war aircraft. Masking was complicated, as I used an airbrush to do the work, but nevertheless it gave the desired straight dividing line down the fuselage sides and got into the inaccessible parts round the radome and undercarriage with ease. Once the paint had dried and the masking removed I was able to add the undercarriage wheels, pre-painted, and paint the propeller black with yellow tips. Gunmetal colour was applied to the exhausts and a red and white application made to the tail hook.

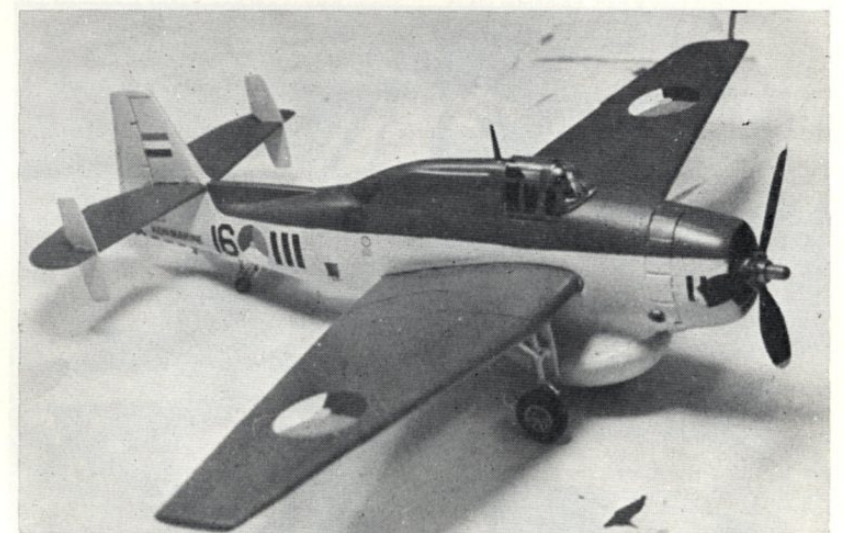
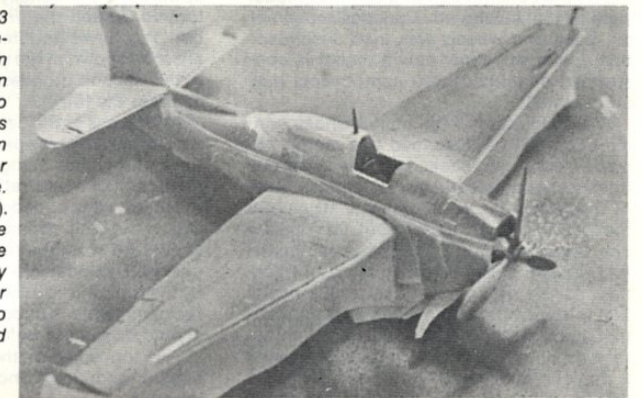
I found most of the decals I needed in the Frog Meteor F4 kit. Both wing and fuselage roundels were the right size and I found I could use the '9' out of the Frog code turned upside down as a '6' for the Avenger code. The other figures were an easy matter and I used Letraset for these. I also used Letraset for the 'KON.MARINE' marking under the tailplane, rubbed down onto the edge of an old decal sheet which had the carrier overall. This was then cut out and damped into position in the normal way. Small 'No step' marks and other stencilled lettering was found mostly from Modeldecal sheets.

Other variants

Readers will soon discover that I took the most difficult model of the three Avenger conversions offered in the Airmodel conversion kit. By studying the methods used it is a simple matter to apply them to the other models so that any one can be made to complete satisfaction. To make this conversion was an interesting job and one well worth doing. The cost of the conversion is relatively small and certainly changes the outline shape of the Avenger considerably.



Above civilian TBM-3 borate bomber converted from an Avenger, registration N7961C, belonging to SIS-Q Flying Services of California. An underfuselage hopper replaces the radome. (Aviation Photo News). **Right** masking the lower duck egg blue surfaces before spray painting the upper surfaces. **Below** two views of the finished model.



Scratch-building large scale tank models

Continuing last month's description of a 1:35 scale Cruiser Mk IVa by **Jeremy Broughton**

LAST MONTH I discussed various of the factors that need to be weighed before embarking on the construction of a complex model such as that illustrated. The construction of the track and wheels was then described; this article will show how a model is constructed on which these components may be mounted!

The main parts of the model whose construction will be described this month are made from plastic sheet, supplied in various thicknesses by several manufacturers. Most of the work will use sheet of 5, 10 and 20 thousandths of an inch (thou) thickness. I like, where structural strength is not important, to use sheet corresponding in thickness to the original armour, and a useful fact to remember is that 40 thou is approximately 1 mm; thus in 1:35 scale 20 thou represents 17 mm (2/3 inch), 10 thou represents 9 mm (1/2 inch) and 5 thou represents 4 1/2 mm (1/4 inch). Using this last, very thin sheet, fine detail may easily be reproduced, although if too much liquid cement is used the plastic will promptly dissolve.

I always begin the construction of the main body of a model where hull and turret meet: the turret ring. First a rectangle of 20 thou plastic sheet is cut to form the hull top. Four rectangles to represent the air intakes are cut out and a circle, radius 21 mm, corresponding to the turret ring is scribed with dividers; the disc is carefully cut out and the edge of the hole smoothed. A strip 3 mm x

132 mm of 10 thou sheet is cemented around the inner edge of the hole to project upwards; a fractionally longer strip is then formed around the first into another cylinder. The turret bottom is cut from 20 thou sheet as shown in the drawing and attached to this second cylinder; we now proceed to build up the turret.

To the rear of the bottom plate is added a wall formed of three pieces of 20 thou sheet, the central piece being curved to follow the projection of the turret ring. The floor of the turret bustle is added next, followed by the rear turret wall. Where possible the seams should be strengthened with thin strips of plastic. The sides are now added, followed by the roof: this is in two parts, and holes for the commander's cupola and loader's hatch should be cut out before installation.

The top edge of the side plates is left square, and should not be filed flush with the roof.

The turret front plate is now cut out — still from 20 thou sheet — and a rectangle for the gun mounting removed. The mantlet is constructed from sheet plastic; the rear is added as shown in the cross-section and holes drilled in them to accept the trunnions: the trunnions should be a stiff fit. The sprue. Trunnion supports are cut out and holes drilled in them to accept the trunnions: the trunnions should be a stiff fit. The trunnion supports, with the mantlet assembly between, are then attached to the inside



The model from the front, showing the lamps and gun mantlet.

face of the front plate, which in turn is glued in place in the turret. A rectangular cut-out in the bottom edge of this plate is necessary to clear the turret ring.

The basic turret is complete, and now the boxes formed by the armour plates added in the up-armouring process will be constructed to give the external form of the turret. I have provided drawings of this 'basic' turret as its outlines are obscured by the additional armour; when next month we come to the Cruiser Mk I a similar turret will be needed as this tank had the same turret as the original Cruiser Mark III.

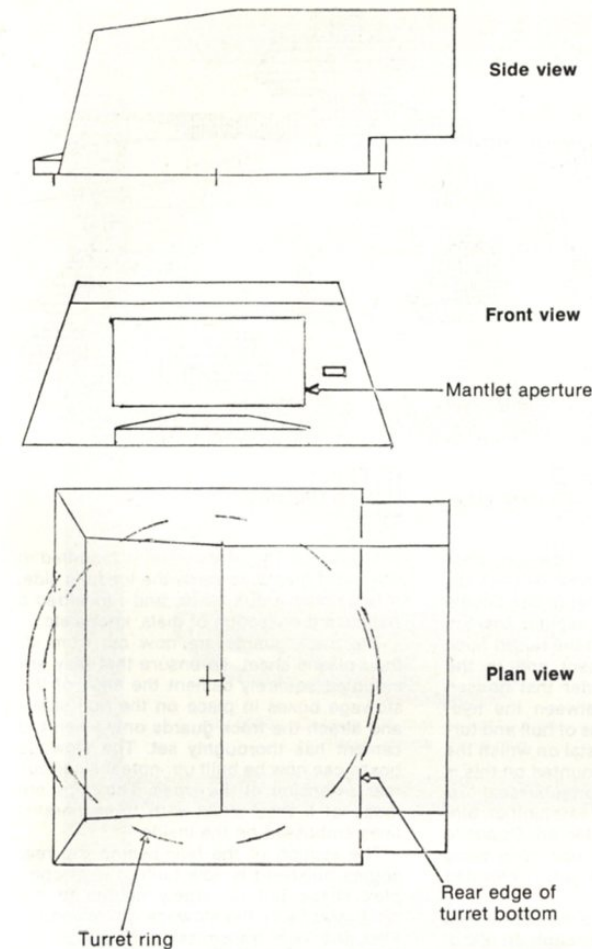
The armour plates that surround the turret are, on the original tank, only 3/16 inch thick, so a method has to be used to represent this thickness and yet provide a rigid structure and allow the embossing of the many rivets that are a prominent feature. The method that I use for representing riveted armour employs a sheet of 5 thou plastic embossed with the rivet detail, this being supported by a thicker sheet of 20 thou plastic which is bevelled at the exposed edges to give the apparent thickness required. In this case the thinner sheet is of the necessary thickness and the thicker will be filed to a sharp edge.

First the various supporting pieces should be cut from 20 thou sheet; pieces to extend the turret front are also needed. Those edges that will, after the plates have been installed, be visible, are filed down and those edges that will butt against other pieces shaped to fit neatly.

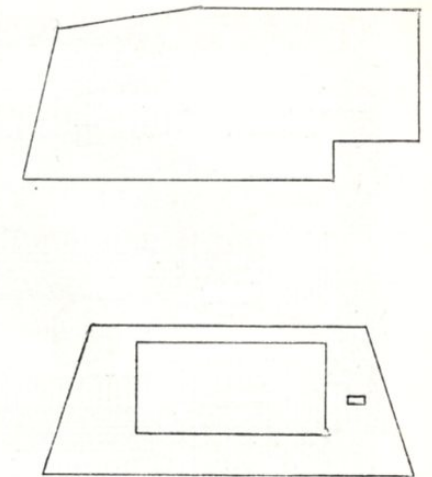
The shapes of the various surface pieces are now marked on the 5 thou sheet, allowing for the overlap where the supporting pieces butt together; the rivet detail is embossed on the reverse face. Some preliminary practice will probably be necessary to achieve the best results; and the combination of tool, support and pressure used is important. I used a compass point and supported the plastic on a thick sheet of card. When the embossing is complete the individual pieces should be cut out but not yet attached to their supports. A piece to extend the full width of the turret front is produced similarly.

The additional plates are supported by four open frames at each side and one solid

AIRFIX magazine



Left three view drawing of the basic turret in 1:35 scale, on which the additional plates are added to give the characteristic appearance seen in the photos and last month's plans. Right the basic shapes of the side and front turret faces. Below profile of the transmission housing. The outer face comprises the complete shape, whereas the inner lacks the upper triangle: the broken line marks the position of the rear hull plates.



taken that the resulting cylinder would fit snugly in the hole in the turret top.

Two diametrically opposed rectangular holes were filed in the cylinder: the projection supporting the armoured visor is built up around one. The opposite hole is sealed by a vision block mounting, represented by a piece of 30 thou sheet. The cupola is now cemented in place, and its plinth added from 10 thou sheet. This is formed by scribing concentric circles of diameter 24 and 25.5 mm; the plinth is made by curving a part of this strip into a cone of diameter 18 mm and cementing in place.

The cupola hatches are made from discs of 10 thou sheet; if they are to be mounted open then holes must be filed out for the ventilators and 'padding' added; a strip of padding is also needed around the bottom edge of the cupola. The loader's hatches are made similarly.

The turret is now complete except for the guns, wireless assembly and final detailing; these will be described in next month's article about the Cruiser Mk I which, as previously remarked, had a very similar turret to the Mk IVa.

So far the only piece of the hull that has been constructed is the top plate with the lower part of the turret ring. First the hull will be constructed; the shape is shown in the cross-section, but the side walls end at the vertical bulkhead at the rear of the engine compartment. Four pieces to this shape are needed, two of 20 thou for the inner walls and two of 10 thou for the outer walls.

2.5 mm wide strips are used to space inner walls from outer and are arranged to give maximum rigidity; the two assemblies are then mounted under the hull top-plate with two rectangular bulkheads separating them. The outer plates should have cut-outs to show the exposed axle ends and special support should be arranged under the hubs of the road and idler wheels.

Boxes, painted black, are mounted under the air-intake openings and in each opening are set lengthwise three strips at 30° to the vertical; these represent the louvres. The floor is then added: it is mounted between

frame and one open on each side at the rear: the frames are cut from 10 thou sheet and allowance must be made when shaping them for the bevelling of the plates that they are to support. The frames are attached to the turret, and before adding the plates it is necessary to paint the inner faces of the boxes that are about to be formed. I assumed that once this tank left its factory no one was interested in painting such inaccessible areas and accordingly painted turret sides, frames and the inner faces of the plates dark green.

When the supporting plates are firmly in place the outer 'skin' of embossed plastic is added to the 'carcass'. Several applications of liquid plastic cement are needed to mount each piece; when one section of the skin is firmly in place the next has to be painted with cement and rapidly pressed onto the carcass. It is not possible to attach a complete piece in one step due to the rapid evaporation of the cement, and if too much cement is used it may distort the thin plastic. It is very important that the skin is at every point attached to the carcass for otherwise unsightly 'balloons' will form, particularly around rivets.

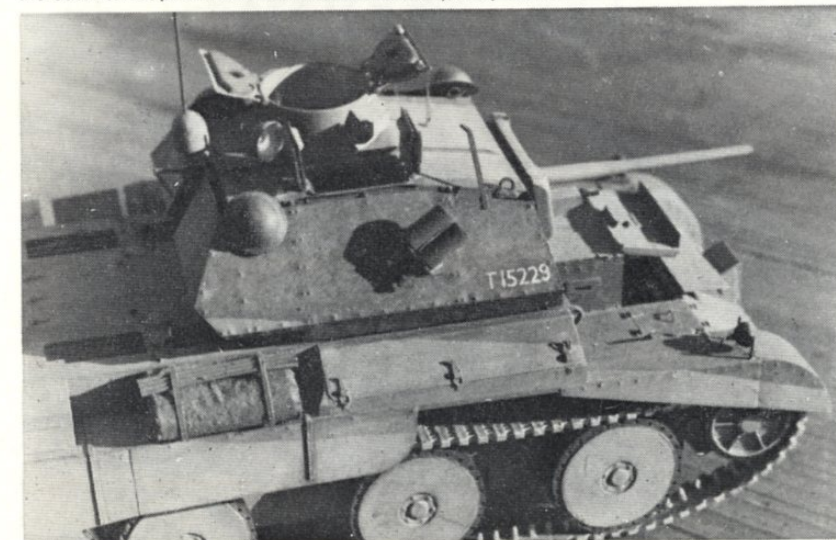
The circular extension of the front plate

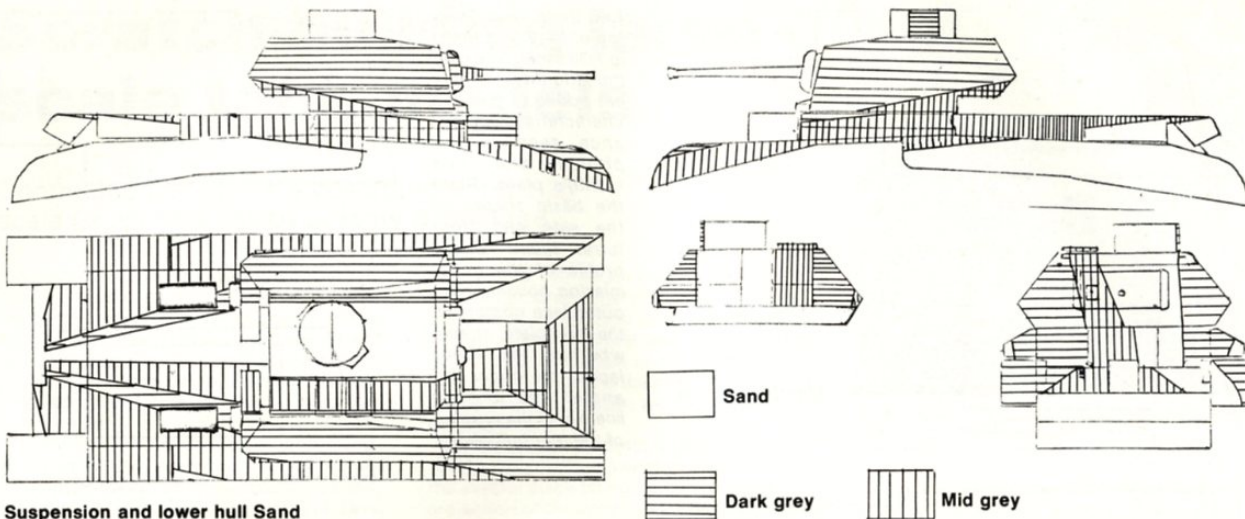
that accommodates the turret ring is now built up with curved strips of plastic sheet until the necessary projection is achieved. The framing is added, and the curved upper section is produced from 10 thou sheet. By experiment a curve is cut for the rear edge of this piece that enables the front edge to meet the upper edge of the extension, and when the piece has been firmly attached its forward edge is trimmed.

On the left of the mantlet is the outer cover of a vision slot in the turret wall; a hole should be filed through the thickness of the wall before mounting this cover. The slot is covered internally by a shield moving between vertical guides, which may be left open.

The commander's cupola is built next. It is formed from two curved strips of plastic sheet, the inner of 10 thou sheet being a little lower than the outer, of 20 thou sheet, in order to leave a ledge on which the hatches will sit. To curve the strips to shape I found a wooden cylinder of correct diameter, then bound one of the strips around it. The cylinder was immersed for two minutes in boiling water, then cooled in cold water. This was repeated for the other strip; they were then cemented together, care being

Detail view of the turret and commander's cupola. The holes in the tyres and the separation of the outer turret plates from the main turret are plainly visible.





Suspension and lower hull Sand

the inner side walls and there is a raised section under the fighting compartment.

If the interior of driver's compartment is to be visible detail should now be added. There is no bulkhead between driving and fighting compartments, but directly under the left-hand wall of the driver's box is a closed box with the instrument panel on the inward-facing side. The driver's seat is mounted on two rails with steering levers to left and right: there is a rack carrying a fire extinguisher directly in front.

The hull around the driving compartment is now built up; the composite construction used earlier for the additional turret armour is used again and this simplifies the representation of the various hatches. The front plate of the driver's cab carries the vision slits and has on either side rearward-projecting strips for protection when the plate is closed; at the bottom is a forward projecting strip which meets a forward opening hatch to form, when the plate is down and the hatch is closed, a horizontal plane. The hinge joining the roof and front of the cab is covered by a strip of fabric, which I represented by tissue paper.

The turret basket may now be constructed if either the turret hatches or driver's plate are open. Most of the details can be seen from the cross-section; there is a circular floor that rests on the raised floor of the fighting compartment and in the centre is mounted a cylinder that housed the rotary connections between the hydraulic and electrical systems of hull and turret. To the rear is the pedestal on which the commander stands, and mounted on this is a column supporting a triangular seat. To the right of this is a curved ammunition bin: the loader sits on the padded lid. Opposite is the gunner's seat, which may move along an inclined column as the gun is elevated and depressed.

The turret is connected to the basket by a curved wall that extends through an arc of 60° from the turret centre line to the left: this is made from thin sheet and I devised a system of pegs and slots to engage this sheet with the edge of the turret floor, so that the floor does not have to be cemented to the rest of the turret, but will rotate with the rest

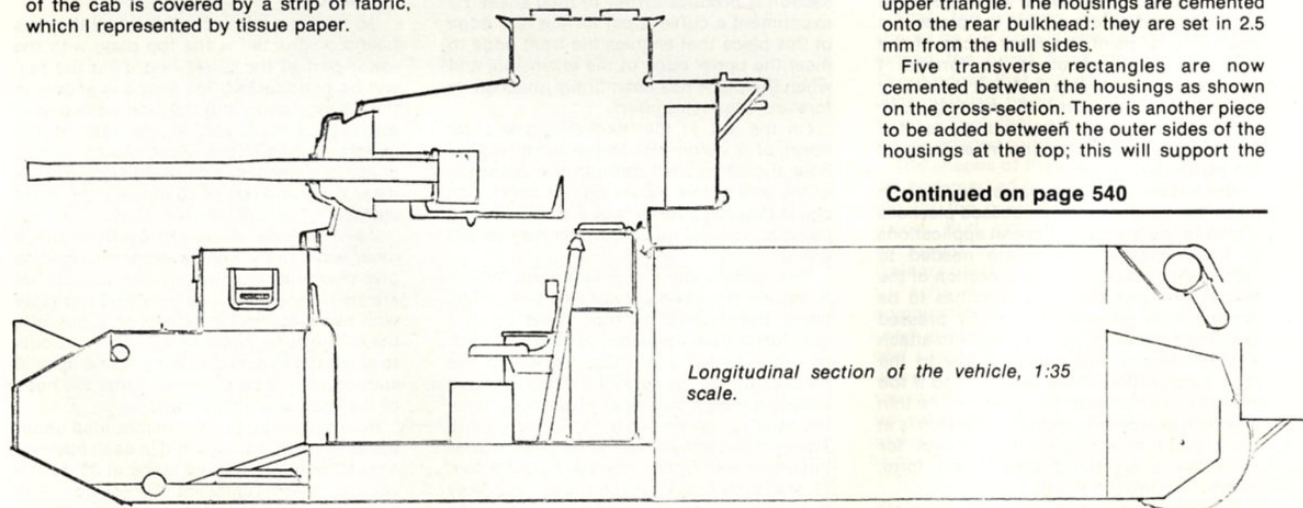
of the turret. The wireless set is mounted in the turret bustle, towards the loader's side; it is painted a dull black, and I included a haphazard collection of dials, knobs etc.

The track guards are now cut from 40 thou plastic sheet. To ensure that they are mounted squarely cement the ends of the stowage boxes in place on the hull sides, and attach the track guards only when the cement has thoroughly set. The stowage boxes can now be built up: note the curious rear extension of the sides. The flaps are made of 5 thou sheet with three parallel lines embossed on the inside.

The section of the hull behind the rear engine bulkhead is now built; it is of complex shape but is largely hidden in the photographs by the stowage on my model. First the two transmission housings are constructed; each consists of two pieces of 20 thou sheet separated by 3.5 mm wide strips and has a curved strip of 10 thou sheet around the curved portion. The shapes of the longitudinal pieces are shown: note that the inner piece lacks the upper triangle. The housings are cemented onto the rear bulkhead: they are set in 2.5 mm from the hull sides.

Five transverse rectangles are now cemented between the housings as shown on the cross-section. There is another piece to be added between the outer sides of the housings at the top; this will support the

Continued on page 540



Longitudinal section of the vehicle, 1:35 scale.



No. 8010 German Tank Destroyer Marder III. Price 55p.



No. 8011. 'Hetzer' German Tank Destroyer. Price 55p.



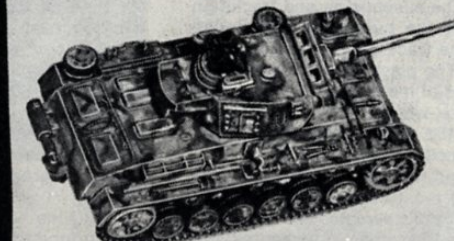
No. 8004. German 105 mm. self-propelled Howitzer 'Wespe'. Price 55p.



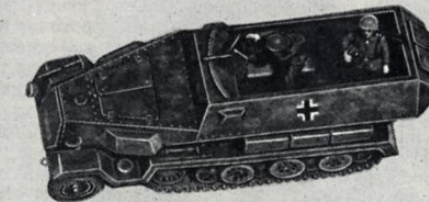
No. 8013. German self-propelled Howitzer 150 mm. Hummel. Price 55p.



No. 8003. German Tank Kpfw II Ausf 'F'. Price 55p.



No. 8001. German Tank Pz.Kpfw III Ausf 'M'. Price 55p.



No. 8002. German half-track 'Hanomag' Sd.Kfz 251/1. Price 55p.

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silencer. The silencer consists of a 42 mm length of sprue, 5 mm diameter, and the curved pipes that lead to the fish-tail exhausts are made from bent sprue. The silencer cover of the original is of very thin metal and so the turret-armour method is used again: the sides are made from 5 thou and 20 thou pieces, the latter with a bevelled rear edge, cemented together, and the top is a single curved rectangle of 5 thou sheet. Before installation three transverse slits are cut on either side of this rectangle, and the whole area painted a dirty, rusty colour.

An open-topped box is now made from 10 thou sheet and mounted on the transmission housings; it is supported on either side, by an arm and will ultimately carry the rack of petrol and water cans.

The rearmost section of each track guard is now added; both extend inward to meet the transmission housing. The air filter covers are next made from 10 thou sheet. The raised curved section on top of each is filed from a 20 thou strip.

The air filters themselves are largely hidden. At the rear a box shape is visible and at the front is a large hemisphere joined to the hull by a horizontal pipe.

The last addition to the hull at this stage is the headlamp housing. I cast the lamp in clear plastic and painted the rear part silver; this was then glued to the front plate and the housing completed and mounted on the hull.

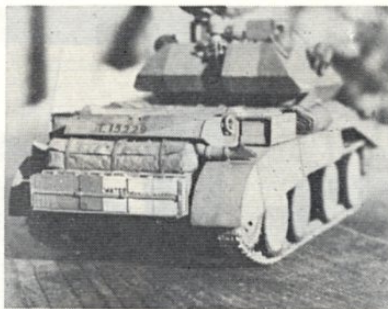
We have now reached the important stage of mounting the suspension and tracks on the hull. First the hull sides and under-surfaces of the track guards are painted a sand colour. The plastic discs cemented to the inner faces of the road and idler wheels will hold these wheels at the correct distance from the hull sides and so are cemented directly to these pieces.

The fore- and rearmost road wheels may be positioned most easily by reference to the cut-outs in the sideplates and should be mounted first. The other four road wheels and the idlers may then be mounted by measurement. Care is needed to ensure that the outer faces of the four road wheels are accurately aligned.

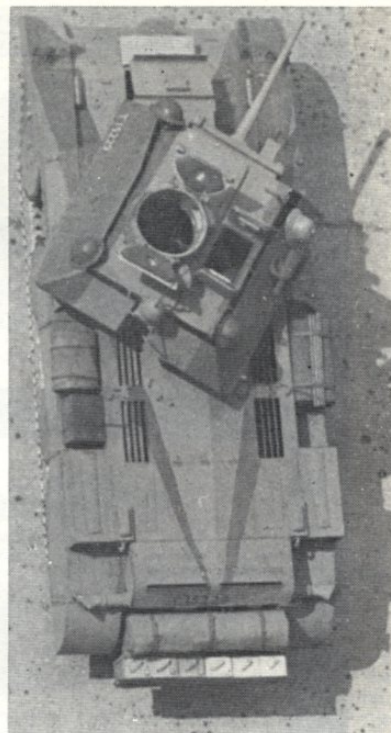
The axles of the sprocket wheels have, because they project so far from the transmission housings, four supporting strips, forming an open pyramid that supports the central axle. The axles are made from sprue and the pyramids from 10 thou sheet: the sprockets are then mounted on the axle-ends.

Now the track must be assembled from the castings. Begin by gluing together four sets of castings to form the upper and lower 'runs' of the track on either side. When these lengths are firmly glued together they should be painted, together with several extra track-castings.

The particular difficulty lies in fitting the sections of track around the sprocket and idler wheels. First the track is attached around the sprocket: it may indeed be better to do this before mounting the sprocket wheel in place.



Above rear view of the model showing the tank number, T.15229, in black on a sand rectangle on the silencer cover. The same number is white on both sides of the turret. Note exhausts, air intakes, and rack of petrol and water cans. **Right** bird's eye view of the finished model clearly showing the lines of the camouflage pattern and the additional armour plating on the turret. The shield attached to the gun mounting is just visible through the commander's cupola.



A single piece of track is heated in boiling water and then, while still pliable, is bent around the sprocket and the sprocket teeth engaged in the slots in the sides of the track. It must be held in place until completely cool, when it will retain its new shape indefinitely. No glue is needed and in fact the track is held in place exactly as on the original.

The lower run is now attached to this first piece of track; heat will be needed to curve the track around the first and last road wheels.

Ideally the next piece to be added should pass around the idler without a joint; it may be necessary to add a shorter length cut from one of the castings to achieve this. The top run of track is now added and a final piece added to join by the sprocket with the original length.

I have found it unnecessary to deliberately attempt to represent the characteristic track sag: in time the plastic track will stretch under its own weight to sag most convincingly and any effort by the modeller to produce his own sag will probably give in the long term an exaggerated effect.

The tracks, particularly their upper portions, are given a final painting, and then the sandshields are added. First the curved sections at either end of the trackguards are made from 10 thou sheet, formed by immersion in boiling water. The sandshields are then cut from 5 thou sheet; the rear pair are in three pieces joined by plastic strips on the concealed face, and should be creased before mounting.

Various small details must now be added to complete the hull, including sidelights, fire extinguishers and various hinges,

hatches, etc., on the rear hull decking.

The model is now painted. I have included plans to show the camouflage scheme applied to my model; the lower areas of the tank are painted a sandy yellow and the upper areas are covered in a series of strips and triangles of sand, mid-grey and dark-grey. This will be discussed next month more fully when a very similar camouflage pattern will be applied to a Cruiser Mk I. A steady hand is needed, particularly at the 'focus' of the triangles on the silencer cover, but the effect is most impressive.

The rack to be mounted on the rear box is now made up from strips of 10 thou sheet. The cans are made in pairs and then painted. Water cans are white with 'WATER' in black, and petrol cans are bare metal. They are placed in the rack, the retaining strips added and the assembly attached to the rear stowage box.

The various bundles, boxes and helmets generally strewn around the exterior of an 8th Army tank can then be added and the pristine paintwork spoiled in whichever way the modeller prefers. I sprayed successive coats of very thin grey poster paint. The paint runs into nooks and crannies before drying to leave a convincing representation of the ever-present desert dust. In order to persuade the paint to coat the tracks successfully a little detergent is added.

I hope that the ideas and techniques described in this article and its predecessor have proved useful and stimulating. Next month similar methods will be employed to produce a model of the Cruiser Tank Mark I which, although designed to fulfil the same role as the A13 series, presents a very distinctive appearance. □



Part 6 — The Armstrong Whitworth Atlas

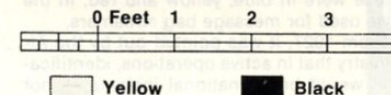
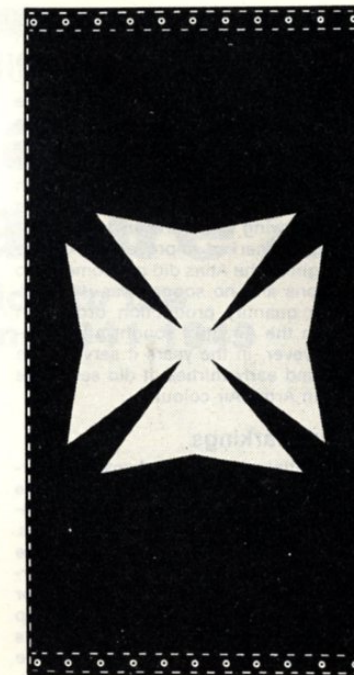
THE ARMSTRONG WHITWORTH Atlas was the first aircraft designed from the outset for army co-operation to enter RAF squadron service. It replaced the Bristol Fighter in squadron service from 1927 when initial deliveries were made, and in all 271 were delivered to the RAF as Atlas (AC), and a further 175 as trainers known as Atlas (DC) or (TM) until June 1932 when the designation was changed officially to Atlas (T). The initials stood for Dual Control, Two-Man version and Trainer respectively.

Squadrons using the AC version were, with locations given as at January 1 1932: Nos 2 (Manston), 4 (Farnborough), 13 (Netheravon), 16 (Old Sarum), 26 (Catterick) and 208 (Heliopolis), all at three flight strength. The DC versions were used by

Station Flights at Andover and Duxford, the Home Communication Squadron at Hendon and Nos 2, 3, 4 and 5 Flying Training Schools.

Atlas livery

The RAF Atlases had most conventional finishes. Overall they were the standard powdered aluminium doping. The promulgation of an order for serial numbers to be displayed under the wings in 30-inch characters of 4-inch strokes, coincided with their delivery and was thereby applicable to all. They had a relatively short life, the majority being replaced by the mid-thirties; but in that time they were subject to the August-October 1930 rudder striping changes from blue, white and red from the



Above canvas bands for exercises, 1927. **Left** an early production Atlas AC that served with No 26 Squadron, bearing red diagonal bands around the fuselage (MoD). **Below** later production Atlas AC showing modified fin form and Handley Page leading-edge flaps introduced on the top wing (MoD H24).

rudder post to the reverse order.

No longer did Armstrong Whitworth emboss the cowlings of their aircraft with the letters 'A.W.' as on FK8s, but a characteristic of the firm's was evident even in the rigid way the finish of RAF aircraft was decreed at this time. This was by the insertion of hyphen between letter and number in the serial marking on the fuselage side. In some cases the hyphen was even included on the underwing serial presentation.

Although a marked improvement on the Bristol Fighter, the Atlas did not come up to expectations and no sooner was it in service, with quantity production orders on hand, than the Air Staff sought a replacement. However, in the years it served, late twenties and early thirties, it did see some changes in Army/Air colours.

'Enemy' markings

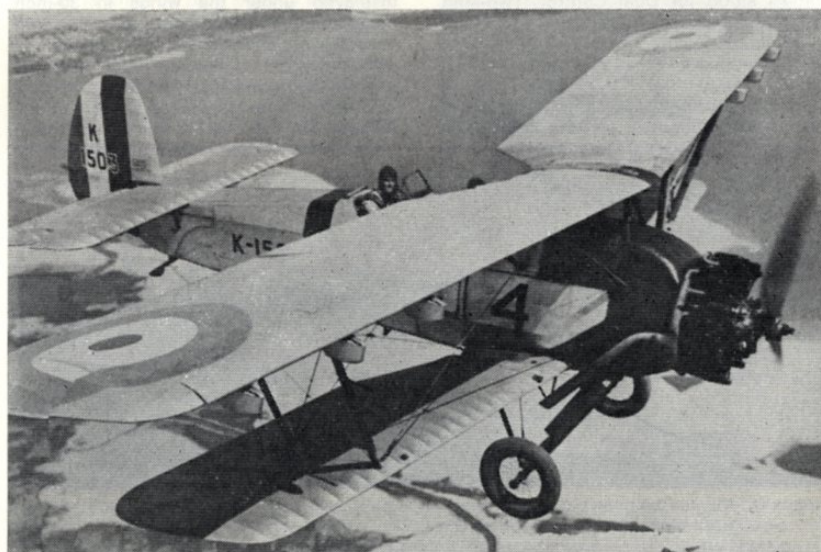
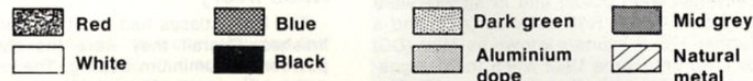
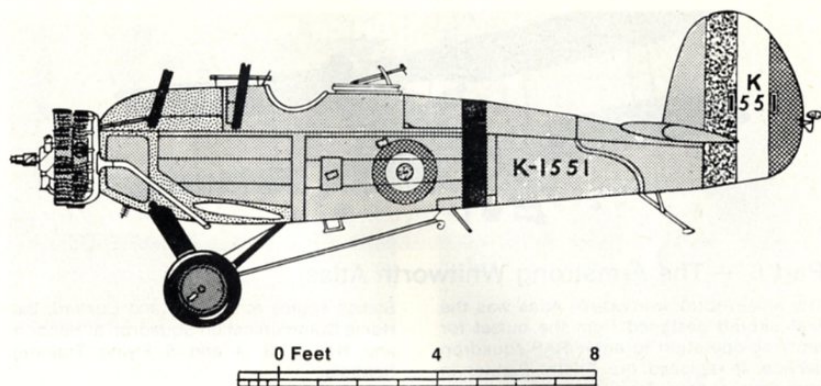
An essential element of Army/Air exercises, usually held in the autumn after the harvest had been gathered in, was the representation of 'enemy' and 'friendly' forces.

In general, the 'friendly' forces were those playing a defensive role and retained normal RAF markings, while the invaders or attacking forces would represent enemy. Up to 1927 standard markings for the attackers was coloured streamers, but these could be confused with formation leader's streamers. These were in blue, yellow and red, in the style used for message bag streamers.

From 1927, it was pointed out by the Air Ministry that in active operations, identification would be by national insignia — not streamers, and the School of Army Co-operation tried out a standard 'enemy' insignia. It was decided that this would be a yellow Maltese Cross on a black background. Strips of canvas were prepared, as illustrated, for placing over the under-surface roundels of the lower wings of Bristol Fighters. However, in any side-slipping manoeuvre, these canvas markings tended to flap up and slightly affect performance, so that for the Atlases in service for the 1929 exercises a new method was tried.

To present the same marking by direct painting, lamp black was mixed with size and water and applied over the lower wing roundels. When dry a Maltese Cross in size, mixed with yellow ochre and water, was applied. It could be washed off with soap and hot water.

Top drawing of a typical Atlas aircraft of No 16 Squadron, 1930 (Peter G. Cooksley). **Centre** an Atlas serving with No 208 Squadron in Egypt, 1935, bearing an unofficial unit emblem on the fin (MoD H871). **Right** the standard truck for Army Co-operation Squadron mobility, the Morris Commercial adapted for the RAF.



Canadian and civil service

Quickly replaced by the Audax, the remaining Atlases were used as instructional airframes and renumbered in the M serials as shown in the allocations table.

The Atlas was not exclusive to the RAF either as an army co-operation aircraft or trainer. The Royal Canadian Air Force ordered two AC type which were registered G-CYZA-B, re-serialled 17 and 16 and then later 402 and 401; two more ordered as 17 and 18 became 403-404, and 112 allotted to a further purchase became 405. These were supplemented by ten ex-RAF Atlases supplied later.

Four trainer types, G-ABHV-X and G-ABOO, were allotted to the Armstrong Whitworth Reserve School operated for the RAF. Of these G-ABHV overshot on to a railway line January 13 1932 and G-ABHW was completely wrecked October 8 1931 when a pupil lost control and a wing hit the ground; fortunately both instructor and pupil escaped uninjured.

AW Atlas RAF serial allocations

J8675 Civil H-EBLK modified for RAF evaluation.

J8777-8801 20 AC ordered June 1927 to Spec 33/26. J8777 used for tests, J8778-91 reserved for service trials with No 13 Squadron, J8792 trainer prototype. J8799 float-plane version. Rest delivered to store.

J9039-9050 12 AC ordered additional to June 1927 contract to equip No 26 Squadron.

J9129 Civil demonstration aircraft G-EBNI purchased for RAF in 1928.

J9435-9477 43 DC ordered August 1928 for Flying Training Schools.

J9516-9564 49 AC ordered October 1928 to equip Nos 2, 4 and 13 Squadrons. J9564 became RCAF406.

J9951-K1036 87 AC ordered August 1929 mainly for overseas used in No 208 Squadron and No 4 FTS. J9951 became RCAF 407 and K1018 became instructional airframe 642M.

K1113-1114 2 AC replacement aircraft.

K1172-1197 26 DC ordered March 1930 and mainly delivered to RAF College, Cranwell. K1196 became instructional airframe 724M.

K1454-1506 53 DC ordered June 1930. Delivered to training schools. K1464, K1471, K1472, K1477, K1479, K1501 became instructional airframes 730M, 802M, 818M, 722M, 819M, 678M respectively.

K1507-1602 96 AC ordered June 1930. General replacement aircraft. K1513-1514, K1516, K1528, K1534, K1541, K1547, K1553, K1557-1558, K1564, K1568, K1570, K1591-1594, K1596-1598 became respectively instructional airframes 855M, 641M, 847M, 725M, 848M, 640M, 741M, 735M, 586M, 736M, 742M, 793M, 796M, 668-671M, 672M, 862-863M. K1529, K1531, K1540, K1545, K1550, K1556, K1561, K1566 became respectively RCAF 408-415.

K2514-2566 53 DC, final Atlas order. K2516, K2523, K2527, K2535, K2549, K2553-2556 became respectively instructional airframes 798M, 723M, 721M, 875M, 703M, 731-734M. □

May 1975

Wargaming with a difference . . .

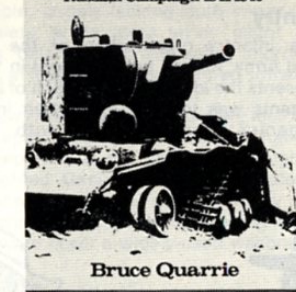
Tank Battles in Miniature 2

A Wargamers' Guide to the Russian Campaign, 1941-1945

by Bruce Quarrie

Tank Battles in Miniature

2 A wargamers' guide to the Russian Campaign 1941-1945



'Extremely comprehensive' is how Martin Windrow describes Bruce Quarrie's new book. Following the same format as Donald Featherstone's earlier title in the series on the Western Desert Campaign, (£2.80 net, £3.03 by post) it combines a concise but detailed account of the actual campaign with descriptions of the tanks, guns, aircraft and organisation of the opposing forces, and numerous suggestions as to how these can be reproduced in miniature on the tabletop. The contents include chapters on tank and anti-tank fire, terrain and climate, partisans, armoured trains and artillery support.

200 pages, 8½"×5½", 25 photos and 37 maps and diagrams. Case bound with colour laminated jacket. **£3.95 net** (£4.18 by post).



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George Gush

renaissance warfare

Conclusion — The English Civil War

THE CAVALIERS and Roundheads seem a logical choice for the last armies to be included in this series, because they are not only of particular interest to British modellers and wargamers, but also represent very well the 'standard' pattern of weaponry, tactics and organisation which had been evolved from nearly two hundred years of experimentation in the Renaissance period, and which was to be generally followed throughout the later 17th Century, until the bayonet finally removed the pikemen from the battlefield.

At the same time, the English Civil Wars of the 1640s are by far the best-known and best-researched part of the whole 'Pike and Shot' era, so that, whereas earlier articles in this series have aimed to 'break new

ground', this article can only give an outline and refer the reader to some of the large range of books already available for the full picture.

Except where stated, details apply to both sides, the armies of King Charles and of Parliament, contrary to popular and cinematic belief, being nearly identical in organisation and appearance.

Infantry

The infantry organisation of the New Model Army, formed by Parliament in 1644, represents the ideal aimed at. Each of its 12 regiments was to have 1,200 men in ten companies: the colonel's with 200,

Lieutenant-Colonel's 160, Major's 140, and the seven Captain's companies 100 each. A third were pikemen, the rest musketeers. Such units derived from later Dutch practice, and bore a very close resemblance to Swedish, French, or (in practice) Imperialist units of this period.

Paper organisation, however, bore even less relation to reality in the Renaissance period than later, and in practice infantry regiments could have as few as six companies, were probably more often of eight than ten, and in numbers could range from as few as 200 to a usual maximum of 800 or 900. Numbers were, as usual, affected by desertion (though there were many incidents of stubborn heroism, like the last stand of Newcastle's Whitecoats at Marston Moor, there must have been large numbers with little attachment to their commander or cause — as witness the many instances of victors enlisting their prisoners!) Raising troops was also on a particularly local, individual and haphazard basis — after all, both armies had to be hastily improvised, with only Trained Bands and veteran officers from the European wars as a basis.

Contemporary drill books such as Robert Ward's *Animadversions of Warre* tend to advocate rather complex formations based on Swedish models, but with so many un-

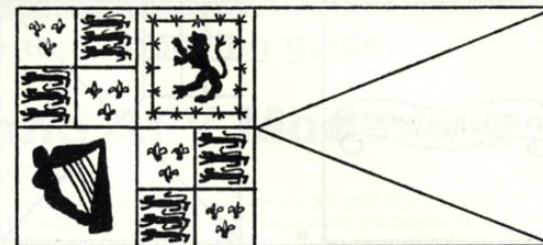
trained men, simpler tactical dispositions, perhaps based on Dutch models, were more likely to be used in practice, especially at the beginning of the war. Later there seems to have been some movement toward Swedish methods — formations only six deep, and musketeers sometimes drawn out into three ranks to give simultaneous fire by salvo (used by the New Model, and Montrose's army on the Royalist side), instead of the usual countermarch method. A regiment would form one or two 'divisions' in battle, each drawn up with pikes in the centre and shot on the flanks, though musketeers were often detached to form a 'forlorn hope' line of skirmishers, or, again Swedish-style, to support the cavalry.

Weaponry was almost standardised, though the proportions mentioned above were not always achieved; Parliament from 1643 probably came pretty near them but the Royalists, especially early in the war, had up to half some units pike-armed.

The shot were all musketeers, mostly armed with Dutch-pattern matchlocks, though a few units armed with flintlocks were raised to guard baggage and artillery trains (less likely to set fire to the open powder-barrels the gunners still favoured). These, like 'forlorns', might possibly have dispensed with the rests still employed by most musketeers.

The musketeers' protection would, at most, be helmet and buff coat, but the pikemen were supposed to have corselet and helmet (the latter likely to be an open type with a brim; the 'lobster-tail pots' associated popularly with Parliamentarians were primarily cavalry helmets, worn by both sides). Some, like those of the Trained Bands, also wore tassets, though these, and

Royal Standard. Fleur de lys and harp gold on blue. Scots lion and border red on gold. English leopards gold on red. Tails, if present, probably red.



the gorget (now chiefly an officers' distinction) were beginning to be discarded. A sleeveless, long-skirted buff coat gave extra protection. Pikes, on issue, were 16 to 18 feet long, though often shortened by their bearers, and a cheap sword was supposed to be carried by all infantry.

Officers had partisans, sergeants and colour-guards, halberds, but these were no longer weapons of much tactical significance. Practice, again, fell short of precept, the Royalists in the Edgehill campaign, for example, largely lacking both swords and corselets, while local levies might carry clubs, bills, scythes and other improvised arms, at least until they acquired something better.

A few rifled sporting guns were also used, for sniping, mostly in the capable hands of ex-keepers and the like, but, though the far-sighted General Monck suggested, in his *Observations* that each company might well contain half a dozen snipers so armed, they were never a widely-used weapon.

Cavalry

Regiments of horse were normally of six troops, each in theory 71 strong, but a few were larger (normally commanders' own units: Rupert's regiment had ten troops, and Cromwell's 14), and many were smaller, while the troops could, especially in the Royalist army, be understrength. Parliamentary troops were sometimes larger, those of the 11 New Model cavalry regiments being of 100 men each. In battle, the tactical unit was the squadron, normally of two troops.

The great majority of horse were of the 'light cavalry' pattern so effectively employed by Gustavus Adolphus in the Thirty Years' War, wearing corselet, buff coat, leather gauntlets and very voluminous boots. Helmet most likely of 'Dutch Pot' type, apparently sometimes with a three-barred face protector uncommon in Europe, or a steel skull cap called a 'secret' since it was worn concealed beneath a felt hat. Arms were a pair of wheel-lock pistols in saddlebow holsters, and a sword (usually a long straight 'tuck' suitable for both cutting and thrusting, but sometimes a 'Papenheimer' or other rapier). As with infantry, troopers might lack some of these items, particularly corselets and pistols.

Such cavalry were still sometimes referred to as 'Harquebusiers' or 'Carabineers', but carbines were carried only by some officers. Light 'poll-axes' or 'horseman's axes', like those of Poles, Imperialists and others, were sometimes used, slung by a ribbon from the wrist so as to leave the hands free for the pistols.

Most successful tactics for such cavalry

were again Swedish — three-rank line formation; charge at the gallop with chief reliance on the sword; pistols used only by the front rank at the last moment, or reserved for the ensuing mêlée. The dashing, if somewhat undisciplined cavalry provided by the Royalist gentry and their retainers employed such tactics throughout the war, but in the early years the 'decayed serving-men and tapsters' of the hastily-raised Roundhead horse tended to use deeper Dutch formations, advancing at the trot or even (disastrously) awaiting charges at the halt; in both cases relying primarily on their fire.

The few units of three-quarter armoured cuirassiers (the best known were Essex's Life Guard and Sir Arthur Haselrig's 'Lobsters') also naturally followed these tactics, standard for cuirassiers; as Captain Rudd stated in 1663, the cuirassier 'is commonly to give the charge upon a trot, and seldom gallopeth, but upon a Pursuit. Having spent both his pistols and having no opportunity to load again, he must then betake himself to the last refuge — his sword'.

Later, Parliamentary horse like Cromwell's 'Ironsides' adopted the new tactics, though they still sometimes charged at 'a good round trot' rather than a gallop, perhaps for better control; their superior ability to rally after a charge being the key to several victories over the Cavaliers, who in the best traditions of British cavalry, were liable to be spread all over the neighbouring countryside after a successful charge (though earlier both sides were about equal in this respect, often leaving the infantry to fight it out alone — and there were some instances of Royalists keeping in hand well enough to charge several times in the same action.)

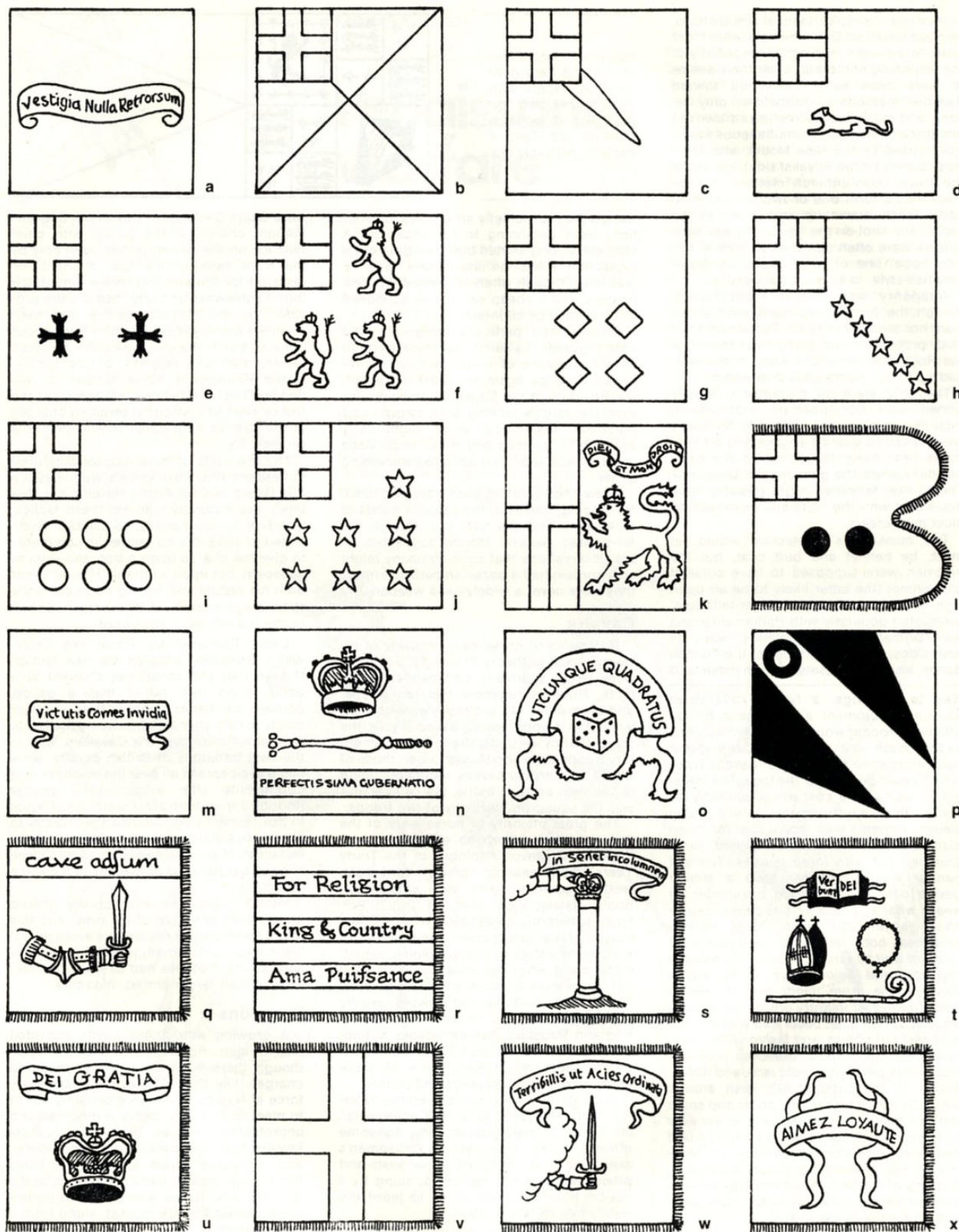
Monck suggested that cavalry should ideally form one-third of an army, and this might be taken as a reasonable average, but there was much variation; the Royalists in particular sometimes had as much as half, even of their larger armies, mounted.

Dragoons

A growing arm, these useful mounted infantrymen normally fought on foot, though there were instances of mounted charges, like that of Okey's Parliamentary force at Naseby. They were certainly not fit to meet real cavalry, being ill-mounted and unprotected (dressed like infantry musketeers apart from their boots and spurs), and unsuitably armed, since only officers had pistols, rankers carrying a sword, and a 'dragon' (snaphance with a 16-inch barrel) or shortened firelock musket, slung from a shoulderbelt.



Key to drawings. a typical cavalryman showing equipment and harness for an officer. A trooper would have plain holsters, saddle cloth and sword belt. The rather square-crowned hat is one of various types which could be worn at the time. The trousers as well as the coat would probably be leather. b cavalry trumpeter. Note hanging sleeves trimmed with lace, usual for musicians. He has a typical low-crowned, curly-brimmed hat with three plumes. Trumpet banner would probably have a similar device to the troop standard. c drummer. He wears what is probably a montero cap, a short jacket and rather long, narrow breeches, both decorated with strips of lace, as well as large bunches of ribbon at shoulder and below knee. If he was a Royalist, the drum might bear the Royal arms. d Royalist infantry officer. He wears a sleeveless buff coat, decorated with a fringe and knots of ribbon, and fashionable loose, open-bottomed, tubular breeches, with several bands, perhaps of gold lace, and ribbon knots, at the bottom. Red sash around waist. Gorget, partisan and boots and spurs indicate his commissioned rank. e rear view of typical musketeer showing back of buff coat and probable appearance of Monmouth cap. f Parliamentarian musketeer, possibly of the New Model Army. He wears a plumed helmet rather than the more usual hat, and a sleeveless jerkin.



Key to drawings Infantry flags: **a** John Hampden's Regiment (Parliament): probably green. Colonel's Colour (normally plain, but could carry motto, as here). **b** Colonel Charles Gerard's Regiment (Royalist). Lt-Colonel's Colour (ie plain, but with St George's cross). Blue and yellow. **c** New Model Army — Red Regiment. Major's Colour (as Lt-Colonel, plus 'stream'). Red, white stream. **d** Colonel Talbot's Regiment (Royalist). 1st Captain's Colour (one device, in this case a dog, on the field). Yellow. **e** Colonel John Lamplugh's Regiment (Royalist). 2nd Captain's Colour (two devices). Yellow, black crosses. **f** Lord Saye and Sele's Regiment (Parliament). 3rd Captain's Colour (three devices). Blue, gold lions. **g** 2nd Regiment of London Trained Bands (Colonel Pennington) and New Model Army, White Regiment. 4th Captain's Colour (four devices). White, rose lozenges. **h** Sir John Gell's Regiment (Parliament). 5th Captain's Colour (five devices). Yellow, blue stars. **i** Tower Hamlets Regiment, London Trained Bands. 6th Captain's Colour (six devices). Red, white discs. **j** Lord Brook's Regiment (Parliament). 7th Captain's Colour (seven devices). Purple. **k** King's Life Guard. Captain's Colour. Red, gold lion etc. In all these cases, the St George's cross is red on white. It should be noted that nearly all these flags are based on written descriptions, some incomplete, and while colour and type of device are correct, there may be errors in detail or arrangement. **l** Dragoons — 2nd Captain's Guidon. Dragoons had fringed guidons like this, but generally following the standard infantry system. Cavalry flags: **m** Earl of Essex (Parliament). Cornet. Orange-tawny. Bore this motto only, but not necessarily arranged in exactly this way. **n** Lord Capel (Royalist). Cornet. Sceptre and crown gold, on a blue flag. **o** Cornet. A Royalist Captain of Horse. Very suitable for wargamers! **p** a Company Colour of Rupert's Bluecoats. Black and white. All had varying numbers of black rings placed diagonally running downward from the staff, and black triangles in varying arrangements. This looks as though it might be the 1st Captain's Colour. **q** Major Guntier (Parliament). Top yellow, flag probably red. Armour grey and gold, sword silver, hilt gold, hand flesh. **r** Earl of Stamford (Parliament). Blue, motto black on white. **s** Colonel Lambert (Parliament). Blue. Column and sleeves yellow, crown gold and red, hand flesh, motto black on white, land brown. **t** Major Ludlow (Parliament). Probably green. Bible white, other devices gold. **u** Lord Lucas (Royalist). **v** Royalist Cornet 1644. White, red cross, blue and white fringe (reconstructed). **w** Royalist Cornet. 1644. Black, with black and yellow fringe (reconstructed). **x** Marquis of Winchester (Royalist).

Their regiments were similarly organised to those of infantry, though the single New Model example had the officers of a cavalry regiment. This had ten companies of 100 each, but five or six companies or troops was probably more usual. Monck recommended that an army should have as many

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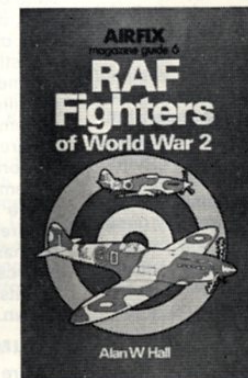
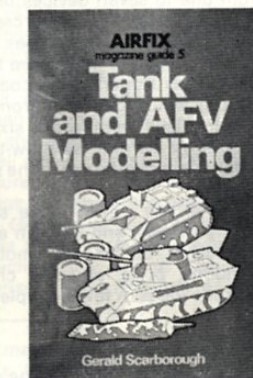
Two more top modelling guides . . .

No 5

Tank and AFV Modelling

Gerald Scarborough

A natural sequel to Military Modelling (No 3 in the series) and of interest to anyone working in the popular 1:76 scale. After explaining the basics of scratch-building the author goes on to describe a number of practical modelling projects which are divided into two sections. The first is on light AFVs including the M1 Combat Car, Covenantor tank and Australian Sentinel tank, and the second on 'heavies' like the Matilda 1, American M2A1 and Russian T-35. Each conversion is fully illustrated with photos and scale drawings. The final chapter covers glass fibre and vac-formed kits, and gives display ideas.



No 6

RAF Fighters of World War 2

Alan W. Hall

From the famous Spitfire and Hurricane to the less well-known types, this handy reference guide for modellers and aviation enthusiasts traces the service life of every fighter to see action with the RAF during World War 2, and some that did not. It is a mine of information on the development, operations, dimensions and performance of the Mosquito, Beaufighter, Blenheim, Mustang and many others, and is of particular interest to younger modellers as it contains many contemporary photos. Both books have 64 pages, 8½" x 5½" (216 x 138 mm), and are fully illustrated. £1.20 net each (£1.33 by post)

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troops of dragoons as it had regiments of horse (ie from one-fifth to a quarter the strength of the horse), perhaps because they were sometimes used to provide mobile fire-support for the cavalry, and this was roughly true of the New Model. In fact, a single dragoon troop or company was not infrequently incorporated into a cavalry regiment.

Artillery

Civil War armies were normally provided with an artillery train, which could be large, particularly on the Parliamentary side — Essex for example surrendering 49 guns in Cornwall in 1644 — though Royalist trains usually had a smaller number of guns, often quite large. This may have been due to lack of money, Clarendon characterising the artillery train as 'a Sponge which never can be filled or satisfied'.

The largest guns employed in the field were demi-cannon (up to 36 pounder) but the saker (5¼ pounder) was about the average field gun. Lighter guns such as 3 pounder 'drakes' were employed in direct support of infantry regiments, especially by Parliament, and a few multiple or battery guns were also used.

Gun teams were the usual hired civilians with farm horses (in the West country oxen were occasionally used); field guns requiring from one to nine horses. Gun crews three to nine men (latter three gunners, six matrosses — a demi-cannon crew). Gunners and matrosses were sometimes equipped with pole axes. The Royalist train of 1643 numbered 575, including 69 gunners, 88 matrosses, 200 pioneers and 44 conductors, and had 275 civilian carters.

Dress

The only general distinguishing mark between the two sides was the use of red sashes and sometimes hatbands by the Royalists, orange by Parliamentarians, and even this was not always observed, senior officers apparently often wearing blue sashes; field-signs and field-words were thus still used for identification.

The wide-brimmed felts often worn would usually be black or grey; plumes most often black or white; stockings grey, and large lying-down collars, and cuffs, white. Coats were frequently of regimental colours (see list); trousers could be the same, and so apparently could the woollen Monmouth caps, or the Montero caps, which sometimes replaced hats and helmets. Coloured lace edging or decorating coats (like the red and blue crosses on the white sleeves of some of Newcastle's men) was already in use, and trousers often bore a broad lace strip with buttons on it down the sides. Other decorations included ribbons tying the knee of the breeches, and bunches of ribbons or rolls at the shoulder.

Linings in contrasting colours were also worn — being, for example, the sole distinction between the uniformly red-coated New Model infantry regiments; it is sometimes said that these would not normally have shown, since lapels, skirts and coat-cuffs were not yet turned back, but in that case it

is hard to account for their popularity as regimental distinctions.

Armour was oftentimes blackened; for senior officers (they often wore cuirassier armour) usually inlaid or bordered in gilt; other signs of commissioned rank included embroidered sword-belts, gold lace on hat, coat and trousers, and generally richer plumes and clothing.

Flags

Infantry flags followed a system, used by both sides; a colour — sometimes but not always that of the regimental coats — indicating the regiment, and a St George canton being borne on all the flags save the colonels; major's company indicated by a triangular 'stream', those of the seven captains by from one to seven devices on the field, usually taken from the badge, crest or coat of arms of the colonel. Mottoes were sometimes also used, and there were some regiments (such as Rupert's Bluecoats — see illustration) which departed from the system. Infantry flags were about six feet square; dragoons carried swallow-tailed guidons which often conformed to the same system.

The cornets of the cavalry were small, square, usually fringed, and bore an extraordinary profusion of devices, mottoes, political cartoons, puns, personal crests, threats, and rude jokes! A few examples are shown.

Figures

Here we are in the only part of the pike-and-shot period which is already a popular basis for wargames, and there is a really excellent range of lead figures available. Indeed, there are so many that it is impracticable to deal with them in detail.

Hinton Hunt, Rose and JAC make 54 mm examples, while at the other end of the scale the new and very practical wargames scale of 15 mm has good ranges available from both Miniature Figurines and Peter Laing, the latter also listing such Marlburian transport and artillery which would be suitable.

Going up the scale, Phoenix have some beautiful little 20 mm figures, a small range, but just enough for complete armies — as well, for none of the figures below will fit with them.

Of the 25 mms, the smallest are Hinton Hunt's; again enough for full armies on their own; taller, but on the slim side, a small range of Tradition figures will fit in fairly well with a similar small but nice range from Rose, or with the figures of the remaining four makers.

Of these, my own personal favourites on the whole are the new Miniature Figurines range, and this is also much the largest 25 mm selection available, but there are very good figures also from Hinchliffe, who do a substantial range including some superb artillery, Warrior, whose range is again considerable and includes guns, gunners and peasant levies, and Garrison, with a new and as yet smaller range.

There are even 25 mm 'Personality Figures' available — Warrior make Cromwell, Charles and Rupert; Hinchliffe Rupert — complete with his famous dog 'Boy'! — and

a very good Fairfax; Minifigs all these and Montrose, Leslie, Ireton and Byron. Finally, no Parliamentarian army can be complete without Warrior's splendid Puritan chaplain, caught with his mouth open in mid-haranguer! By the way, Warrior, Minifigs and Garrison figures all have cast-on pikes, whereas with most of the others separate weapons of wire have to be affixed.

Books

As an introduction to the Civil War armies, I recommend the following: *The English Civil War*, by R. Potter and G. A. Embleton (Almark); *The English Civil War Armies*, by Peter Young (Osprey); and *The English Civil War: A Military Handbook*, edited by J. Tucker and L. S. Winstock (Arms and Armour Press). All are illustrated, the first two in colour, are recent and fairly cheap.

Regimental coat colours

ROYALIST

Red King's Life Guard, Queen's Life Guard, Sir William Apsley's Regt, Sir William Saville's Regt and Prince Rupert's Firelocks (Train Guard).

Blue Prince Charles's Regt (Col Woodhouse), Prince Rupert's Regt (Col Sir Thomas Lunsford), Lord Hopton's Regt, Charles Gerard's Regt and Sir William Pennyman's Regt.

Green Earl of Northampton's Regt, Robert Broughton's Regt and Henry Tillier's Regt (last two from Ireland).

Yellow Sir John Paulet's Regt, Col Talbot's Regt, Sir Charles Vavasour's Regt and Sir Francis Gamul's Regt.

Black Sir Thomas Blackwall's Regt.

Grey Sir Henry Bard's Regt, Col Pallard's Regt and Thomas Pinchbeck's Regt.

White Earl of Newcastle's Regt, Lord Percy's Firelocks (Train Guard), Col Hawkins Regt, Sir Ralph Dutton's Regt and John Lamplugh's Regt.

PARLIAMENTARIAN

Red New Model Army (different linings — Fairfax's Regt Blue linings); most Eastern Association Regts (Essex Regts — blue linings); Lord Montague's Regt (white lining); Lord Robarte's Regt, Denzil Holles' Regt, Sir Michael Liversey's Regt (of horse — blue lining), and Ralph Weldon's Regt (probably —) New Model Dragoon Regt.

Blue Sir Henry Cholmley's Regt, Sir William Constable's Regt, Sir Arthur Haselrig's Regt, Col Mandeville's Regt, Lord Saye and Sele's Regt, Earl of Stamford's Regt (Col Massey), Lord Hasting's Regt (Horse) and Wallers Train Guard (Firelocks).

Grey Thomas Ballard's Regt, Earl of Denbigh's Regt (Horse), Lord Feilding's Regt (Horse), Sir John Gell's Regt, Sir John Merrick's Regt and Simon Rugeley's Regt.

Green John Hampden's Regt, Col Byng's Regt, Samuel Jones' Regt and Earl of Manchester's Regt (red linings).

Tawny New Model Train Guard Regt (Firelocks).

Orange Essex's Regt.

Purple Lord Brook's Regt.

(Both 'grey' and 'white' may simply indicate undyed woollen cloth, and be of similar hue.) □

NEW kits and models

'Revelleader'

PONTIAC'S GRAND AM is a new breed of car, and the body has never looked better than it does, hugging the chassis of Mickey Thompson's car with the awesome 500 cubic inch '426' Hemi engine capable of producing more than 2,000 bhp.

The 'Revelleader' Pontiac Grand Am bodied AA Fuel Funny Car is captured in a recent 1:16 scale kit by Revell. Detailed features include hollow rubber tyres with large rear drag slicks, Grand Am body with fully detailed substructure, more than 60 chrome parts, fuel and oil lines, ignition wires, detailed blown and injected Hemi 'Elephant' engine and authentic Revelleader decal sheet. Recommended retail price is £4.50.

Kit catalogues

JONES BROS OF Chiswick, 56-62 Turnham Green Terrace, Chiswick, London W4, have just sent in a selection of 1975 model kit catalogues which show some mouth-watering models to come.

On top of the bundle was the 12th edition Airfix catalogue, produced in full colour as usual with 64 pages. A number of new models immediately catch the eye, some of which have now in fact been released, including the Sopwith Pup biplane, Scottish Aviation Bulldog, Spitfire VB, Westland HAS 22 helicopter (including a number of retooled parts and two new sets of transfers), Henschel Hs 123 (with new markings) F4U-10 Corsair (also with new markings), Short Skyvan and A300B Airbus; a 1927 Lincoln Roadster as the first in a new series of 1:25 scale 'American car classics'; Crusader III in 1:32 scale as the first in a new series of Series 8 AFVs; HMS *Ark Royal* in the 1:1,200 scale waterline series; a German E-Boat in 1:72 scale to accompany the existing Vosper MTB; French line infantryman in the 54 mm Collectors' Series; WW2 US Paratroops in 00/HO scale; and a PzKpfw IV and Daimler armoured car in the semi-rigid 1:32 scale military series. As is customary with Airfix, there are also some surprises in the pipeline not actually mentioned in the catalogue! Price is 31p post paid.

The second catalogue is a very attractive product from Monogram. Not having a 1974 catalogue it is difficult to pick out what is new, but in the 1:32 scale AFV series two we did notice are an Sdkfz 232 armoured car and Ostwind flak tank. Price of this catalogue is 40p post paid.

Hasegawa's full-colour catalogue at 27p post paid is another difficult one to assess, the only new 1:72 scale aircraft to strike the eye being a Mitsubishi MU-2S and MU-2J. There are also some new 1:700 scale waterline ships and — tantalisingly — five

new 1:72 scale military vehicles 'to be advised'.

The Bandai '75 catalogue is twice the size of last year's and costs 42p post paid. In 1:16 scale there are a Ford Model T 1913 van truck and 1915 stake truck, both very attractive models including real wood parts, plus a 1937 Packard Convertible Coupe. For AFV fans there is a 1:15 scale Hummel, 1:30 scale Jagdpanzer IV, and 1:48 scale Austin K5 truck, Daimler Mk 1 armoured car, Matilda and Valentine tanks, some new Sherman tank variants, plus Russian KV-1, SU-85 and T-34/76. Nice one, Bandai!

Revell's new catalogue (29p post paid) is a mixture, with nothing new except in the warships line where *Scharnhorst*, *Prince of Wales*, *Gneisenau*, *Duke of York* and USS *Olympia* are all featured — but old favourites such as the aircraft carriers *Ranger*, *Enterprise*, *Essex*, *Forrestal* and *Yorktown*

seem to have disappeared.

Jones Bros' own catalogue (40p post paid) lists all their stocks of Airfix, AMT, Aurora, Bandai, ESCI, Frog, Fujimi, Lifelike, MATZ/LS, Matchbox, Monogram, Riko, Revell and Tamiya kits, as well as ESCI transfers, books, tools and materials, and is a useful purchase for modellers living miles from a decent model shop and wanting to order goods by mail.

Revell U-47

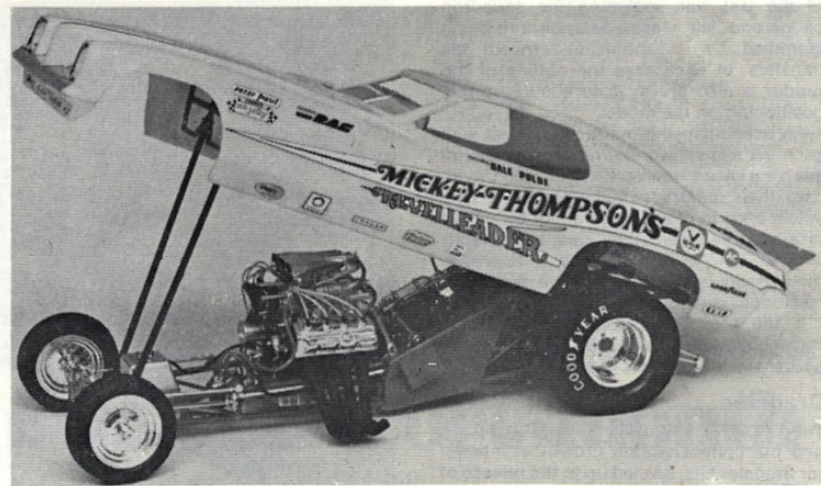
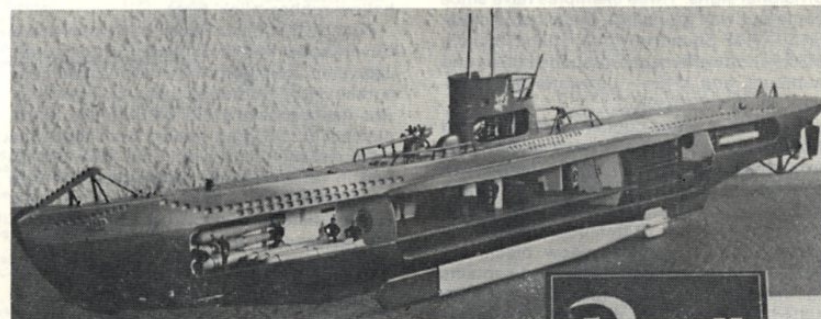
ONE OF THE two latest kits released from Revell is the 1:125 scale German U-47, from the 'Naval Vessels' series.

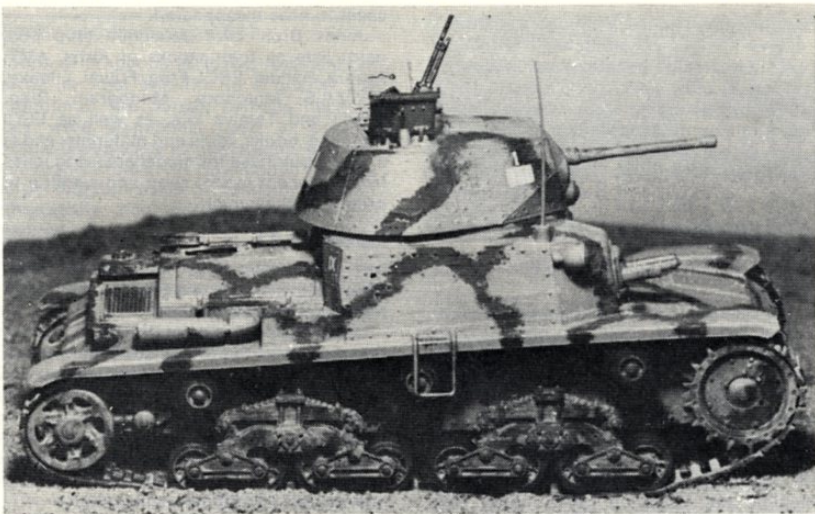
Under the command of Korvetten Kapitän Gunther Prien, the U-47 made a daring and successful raid on Scapa Flow, sinking the *Royal Oak* under the very noses of the Royal Navy.

All the detail of this famous submarine is captured in the 21 in long model which includes engraved deck and hull detail, anti-aircraft and 88 mm deck guns.

The second release is a cut-away hull version revealing interior detail and compartments, two diesel engines and both dynamotors, torpedoes and tubes, battery room and storage batteries, movable rudders and five working hatches. Also included are 15 crew figures and decals. The cutaway hull version costs £2.35, the solid hull model £1.75.

Below manufacturer's display model of the U-47 showing some of the interior detail. Bottom Revell's 'Revelleader' car model.





Tamiya have quite a reputation for producing kits and the 1:35 scale Italian Carro Armato M13/40 recently received for review will do nothing to tarnish that reputation. Quality of moulding, neat fit of parts, accurate detail and clear instructions — everything about this one is right. And what a change to have a model of this important Italian tank which was used so much in North Africa! Admittedly it was not a brilliant design in either armour or performance, and was also difficult to get into and cramped and stuffy when you did mount up. In spite of its drawbacks it performed useful service with its 47 mm gun, and captured vehicles were used, dug in, during the defence of Tobruk by Australian and British units — and typical Kangaroo transfers are included on the comprehensive decal sheet.

Rub-down transfers

ALAN THOMPSON of Ren-Models, 63 Fitzroy Street, Cambridge CB1 1HF, came off the 'phone to us recently in a very excited state about a new range of Blick dry print aircraft and AFV transfers he has got in stock. The range, which appears to be manufactured by Letraset under the Blick label, currently embraces nearly 50 subjects, ranging from code letters and national insignia to pilots' personal and squadron devices and AFV divisional signs. Three examples have since come our way for review, these being sheet M15 — RAF Squadron code letters 1939-45, M30 — Luftwaffe squadron code letters and numbers, and M48 — Luftwaffe tail markings, all to 1:72 scale.

The first of these contains two large and two smaller alphabets printed in Sky plus two small alphabets in grey. The second contains two complete alphabets, with extra characters for the most commonly used letters, plus four lots of numbers one to nine and zero, in three styles: yellow, black, and yellow with a black edge. The third contains tail markings for 12 Bf 109s and three FW 190s from a variety of theatres and periods of the last war, including the squadron badge and 'kill' marks, each aircraft being identified by a caption underneath the transfers. In each case the outline of the rudder is also drawn in to ensure correct positioning on the model.

An accompanying instruction sheet with each set shows two alternative methods of applying these transfers, which need more care than the traditional water-soak type since, once in place, they cannot be shifted around. This means they must be correctly aligned before rubbing down. However, their beauty is that they really do give a professional 'painted-on' look to a model.

A full list of available sheets can be obtained from Ren-Models at the above address, and the price of each is 54p.

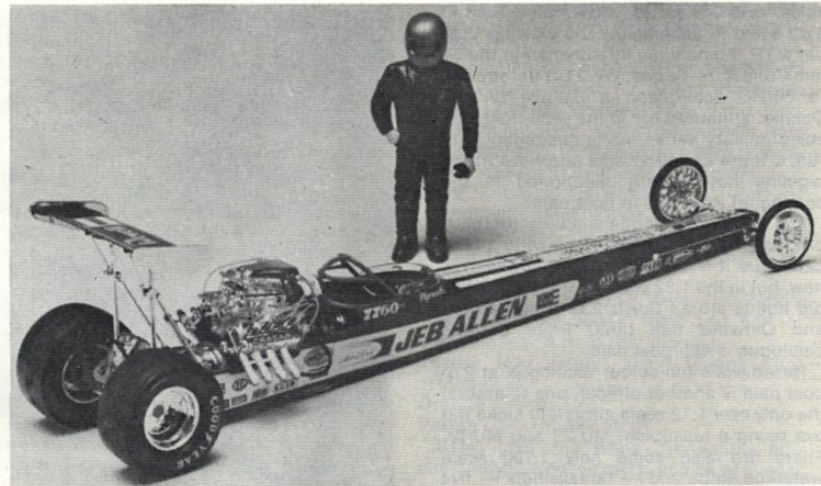
Dragster

THE GROWING enthusiasm for drag racing and the commensurate growth in interest for dragster kits, has led up to the release of

a new 16 1/4 in long rear-engined dragster kit from Revell.

The model is a 1:16 scale 'Praying Mantis' AA/FD rail as driven by Jeb Allen in the USA, and has many detailed features. Great attention has been paid to the cockpit interior, rail chassis and the blown and injected 426 'Hemi' engine, which is complete with plug leads, magneto drive and even movable throttle butterflies. The model also features turntable front wheels, detachable body panels, rear spoiler, drag 'chute pack and hollow rubber 'slick' tyres.

For the first time, Revell have included a driver model in this kit, which is, of course, Jeb Allen, complete with helmet and clear screen visor. Although only 18 years old, Jeb has become a big hit with the youth element of US drag racing fans. He is the youngest top fuel driver in the USA, but his age in no way limits his skill and he is a consistent six second runner. His best elapsed time to date has been 6.33 seconds for the standing quarter of a mile, at the end of which 'Praying Mantis' was doing 243 mph!



If you have an interest in cars and 16 1/4 in of space to spare, you could hardly do better than build this model of a car which on its first entry into a national drag race, took the award for best appearance. The kit retails at £3.90.

SU-85

FUJIMI HAVE ADDED yet another superb model to their 1:76 scale range of AFVs with this kit of a Russian SU-85 tank destroyer. Based on the famous T-34 chassis, the SU-85 was similar in appearance to the German Jagdpanther and, like most self-propelled anti-tank guns of the Second World War, was an improvised means of mounting a heavier gun on a tried and proven chassis. Later, of course, a larger revolving turret mounting an 85 mm gun was fitted to the T-34, at which time the SU-85 was similarly up-gunned, producing the SU-100.

Fujimi's kit, which costs 60p, is moulded in dark olive green plastic with the now cus-

Continued on page 552

MODELTOYS

PLASTIC KIT SPECIALISTS—ASSOCIATE MEMBER I.P.M.S.

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1. Willys Jeep	1/72	40p
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AIR CONVERSIONS

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tomary excellent detail and lack of flash. All parts fit easily, making assembly a joy. A commander figure is provided and the two superstructure hatches can be cemented in either open or closed position. Unfortunately, the driver's hatch is moulded integrally with the hull and can only be opened by very careful cutting from the inside before assembly.

The very clear instruction sheet (despite some of the traditional 'odd' English) includes diagrams showing how to make radio aerials from stretched sprue and towing wires from electric flex. Two sets of markings for fairly typical machines are provided, and this kit should find a welcome in the homes of all those military modellers who have long lamented the lack of variety in available models of Russian armour. Our sample was provided by Ren-Models of Cambridge who can supply by mail.

T-34/85

SECOND NEW Russian AFV offering from Fujimi in 1:76 scale, this kit depicts the successful 85 mm gun-armed version of the T-34 which is still in service with several Warsaw Pact and Middle Eastern countries today. Like the SU-85, it is cleanly moulded in dark green plastic and fits together well. The commander figure in our sample has a rather unfortunate 'shell hole' in the middle of his chest, easily filled with body putty, but this is our only criticism of an otherwise excellent kit. Price is 60p again from Ren-Models of Cambridge.

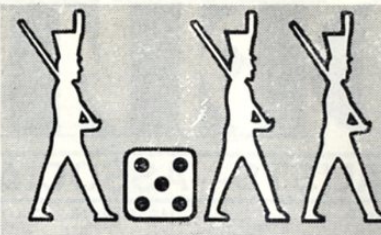
Aircraft carriers

THE TWO LATEST 1:700 scale waterline series kits to reach us under the Hasegawa label depict the wartime American carriers *Essex* and *Hancock*, 'short' and 'long' hull versions respectively of the 'Essex' Class ship. The only place where the two kits differ, in fact, is in the hulls and boxtop artwork, an obvious tooling economy since common sprues of parts for the flight decks, superstructure etc can then be — and have been — moulded. Even the instruction leaflets are virtually identical!

Both models are moulded in dark grey plastic with the customary separate dull red lower hull part as a separate item in case a full-hull instead of a waterline model is required, plus the usual strip of lead to weight a full-hull model so that it floats correctly in the water.

Moulding detail is excellent, down to the criss-cross grid effect of the metal floors on the AA gun turrets, and a positive fleet of aircraft — Hellcats, Corsairs, Helldivers and Avengers — though how one paints on the intricate markings shown in 1:700 scale we don't know!

Both of these kits can be highly recommended to all model warship enthusiasts and are very reasonably priced at £2.45 each. Our review samples came from Ren-Models of Cambridge.



news for the wargamer

Tank Battles in Miniature 2: A wargamers' guide to the Russian Campaign 1941-1945, by Bruce Quarrie. Patrick Stephens Ltd, Bar Hill, Cambridge CB3 8EL. Price £3.95.

THE RUSSIAN FRONT was the scene of the largest armoured battles of the Second World War, and thus is a natural choice for the second volume in this series (number one was *Tank Battles in Miniature: A wargamers' guide to the Western Desert Campaign 1940-42*, by Don Featherstone).

Jam-packed with descriptions of what conditions on the Russian Front were really like, pages of technical specifications on the tanks, armoured cars, half-tracks, trucks, guns and aircraft used, and full details on the best ways of recreating Eastern Front tank battles in miniature, this book could well become a standard reference on military operations in this theatre as well as the wargamers' guide to the period.

The book begins with a preliminary chapter on recreating the battles in miniature using, primarily, 1:300 scale micro tanks, and includes basic ground, time and movement scales. It then goes on to give a graphic account of what Russian Front warfare was really like as seen from both sides, and a concise but detailed account of the course of the actual campaign, illustrated by several maps. Chapters on the organisation, equipment, state of training and morale of the German and Russian armies follow, accompanied by numerous unit organisation charts. Tactics also come in for some discussion here.

Chapter 6 describes the wide variations in terrain and climate found in European Russia, and ways of recreating these in wargames. There are also useful tips on modelling 1:300 scale terrain and buildings. The next chapter discusses the vital questions of lines of communications and supply, and this is followed by what will undoubtedly be, for many people, the most valuable section: a complete breakdown, with performance, crew, armament and armour thickness statistics, of all the major tanks, armoured cars, half-tracks and trucks used by both sides, with notes on their comparative effectiveness where appropriate. The chapter is concluded by a table giving hull and turret front, rear and side armour thickness classifications for wargames use.

Logically, this is then followed by a chapter on firing tank and anti-tank guns both in real life and on the wargames table, which includes such useful information as the armour piercing capabilities of the various guns deployed by both sides, and the amount of ammunition carried by the differ-

ent vehicles represented in a chart listing number of wargame Moves' fire for each. It also includes descriptions and some discussion on the merits of different types of anti-tank ammunition.

The book then goes on to consider air strikes against ground targets, dog-fights and anti-aircraft fire from the ground. Performance statistics for the main types of aircraft used by both sides are given, together with playing rules designed to enable wargamers to add a genuine third dimension to their games using model aircraft manoeuvred over the table.

Subsequent chapters consider such varied subjects as armoured trains, infantry movement and firepower in real life and in wargames, infantry support weapons (artillery and self-propelled guns), partisans and guerrilla warfare, tank recovery and maintenance, minefields and dragons teeth, and board wargames as a means of re-enacting the entire campaign. The book is concluded by an appendix listing availability of model vehicles, a bibliography and index.

It can thus be seen to be virtually a complete guide to every aspect of Russian Front warfare and wargaming, with the accent very much on playability and realism — a difficult combination which this book succeeds in putting across. For anyone interested in the Russian theatre of operations, therefore, a definite 'must'.

Anzio

AVALON HILL have now issued a revised edition of their old 'Anzio' game with several alterations, including the elimination of the basic game, the introduction of air and sea support, and new victory conditions. Although the playing counters are also new, the map board is the same.

The Anzio campaign was a bitter struggle from one armoured line to the next, slow-moving but for bursts after a line was breached, and dominated by the terrain. In this context, the main virtue of this game is also its downfall: it is realistic.

The rules are sensible, if overlong and improperly indexed, and include provisions for second combat, breakthrough and automatic victory, which blunt some rougher edges of non-simultaneous movement. As usual, Avalon Hill's board is solid and better marked than those supplied with SPI games, but, of course, you pay for this. Combat is resolved by step-reduction, with units losing strength gradually before being destroyed: a system with obvious attractions, but the disadvantage of up to six counters of varying strength for each unit. Hunting these out initially can take up to an

hour — so have two dozen seed envelopes to keep them in!

Overall, however, we cannot recommend this game, since despite obvious care and effort, the designers were defeated by the geography and campaign. Italy is long and thin, the Germans can only establish an armoured line on the many suitable Apennine ranges and swamps, and wait for the numerically superior Allies to batter at them turn after turn. Boring!

Anzio is available from Avalon Hill Games, 646-8 High Road, North Finchley, London N12 0NL, price £5.65 including postage.

Strategy & Tactics

THE LATEST ISSUES of this excellent wargames magazine to reach us (Nos 46-48) are all strictly for the 'modern' enthusiast. Number 46 contains two major articles dealing with the period, one to introduce SPI's new game, 'Patrol', the other covering combined arms tactics from 1939 to the present day. The game with the magazine is 'Combined Arms' and covers, in six scenarios from 1939 to 1973, the combined tactical use of armour, infantry and artillery. Common counters, rules and hex map are used together with a Unit Values chart giving separate data for each scenario. Once the simple mechanics of the game have been mastered, it provides an absorbing game that you will want to play again — and again.

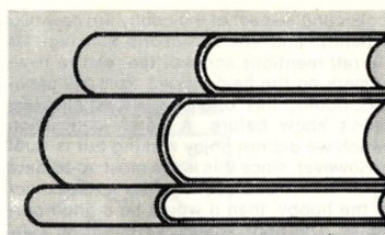
Number 47 is primarily concerned with U-Boat warfare, and includes a major feature article on the German submarine war in the North Atlantic 1939-43 as well as a simulation game, 'Wolfpack'. For a change this is a solitary game, with one player controlling both forces within the restrictions provided in the rules.

The third feature in No 47 is, surprisingly, a rather shallow analysis of the potential for global war in the '70s which does not present anything really new in terms of information and is somewhat inconclusive in its arguments.

Issue number 48 contains a major feature article on US/Soviet naval operations in the Mediterranean in the 1970s plus a simulation game on the same subject, and a second feature article entitled 'Global War — The war against Germany and Japan 1939-45'. The first article on naval operations is extremely good, investigating such topics as Mediterranean politics and the development of Soviet naval power, scenarios for a Mediterranean war, naval forces in the Med, ships of the Mediterranean powers, aircraft and missiles deployed, naval tactics, sub-hunting, first strikes and Mediterranean ground forces.

The second article is another of those which seem to be creeping into S&T more and more these days, which tries to cover too much ground in too little space to be of much practical value to anyone. It's basically a potted history of the Second World War with an emphasis on the economic aspects.

Strategy & Tactics is available from Simulations Publications UK, Freepost, Altrincham, Cheshire WA15 6BR, price £4 for six months' subscription (three issues) or £7.50 for a year (six issues).



books for modellers

Modelling

Airfix Magazine Guide 5: Tank & AFV Modelling, by Gerald Scarborough. Patrick Stephens Ltd, Bar Hill, Cambridge CB3 8EL, in association with Airfix Products Ltd. Price £1.20.

A NATURAL SUCCESSOR to Gerald's earlier title in this series of budget modelling books (No 3: *Military Modelling*), this 64-page hardback covers the basic techniques of scratch-building 1:76 scale tanks and other armoured fighting vehicles using plastic card, rod, sprue and oddments from the spares box.

Scale plans, construction diagrams and numerous photographs illustrate several step-by-step modelling projects, ranging from the tiny Loyd Carrier and Light Tank Mk VIA through the American M1 Combat Car, British Covenantor I cruiser, Australian Sentinel cruiser, British Infantry Mk 1, American M2A1 and German Hummel to the massive Soviet T-35.

Additional notes on vacuum-formed and glass fibre tank kits, model photography and miscellaneous hints and tips make this book invaluable for all modellers specialising in the popular 1:76 scale.

Airfix Magazine Guide 6: RAF Fighters of World War 2, by Alan W. Hall. Patrick Stephens Ltd, Bar Hill, Cambridge CB3 8EL, in association with Airfix Products Ltd. Price £1.20.

THIS VERY HANDY reference book will appeal to all younger modellers interested in RAF fighters of the last war, and will also be useful as a quick reference source for more experienced modellers and aviation enthusiasts.

It begins by describing the RAF's aircraft in the immediate pre-war period, then goes on to discuss the tremendous technological leaps which took place during the five years of the Second World War.

The main section of the book is devoted to an alphabetical listing of all types to see service with the RAF, including the Beaufighter, Blenheim, Defiant, Gladiator, Hurricane, Meteor, Mosquito, Spitfire, Tempest, Typhoon, Whirlwind, Airacobra, Buffalo, Havoc, Mustang, Tomahawk, Kittyhawk and Thunderbolt, as well as one projected fighter which never got off the ground — the Welkin — and one which arrived just too late to see active service during the war — the Vampire. Each type's development and service history is described in concise detail, major marks and variants are all illustrated in the many black-and-white photos, and each description is followed by a data table listing

dimensions and performance characteristics.

A truly tremendous amount of information has been packed into this book's 64 pages making it an exceptionally good buy at only £1.20.

Modelling Miniature Figures, edited by Bruce Quarrie. Patrick Stephens Ltd, Bar Hill, Cambridge CB3 8EL. Price £3.75.

CONCEIVED AND PRODUCED as an essentially practical book on miniature figure modelling, unlike other books which concentrate on the collecting aspect, this really is the first English language guide to all aspects of making model soldiers and other figures in all the most popular materials and scales.

Part one deals with plastic figures, ranging from the tiny 00/HO types made by Airfix, Atlantic and others, through 54 mm models in polythene, PVC, acetate and polystyrene (such as the Historex and Airfix kits) to large scale types (primarily the Airfix 1:12 scale series). However, although Airfix have been mentioned three times so far, this is not an 'Airfix' book, as part two goes on to prove.

This deals with metal figures ranging, once again, from the wargames 20/25 mm ranges of Miniature Figurines, Hinchliffe etc, through 30 mm 'diorama' models to 54 mm 'solid' and 'hollow' types and the even larger 75, 77, 90, 120 and 135 mm collectors' items. Each chapter in these two sections deals not only with the types of model available, tools and materials, animation, painting and display, but also includes at least two (and in some cases many more) practical, step-by-step conversion projects. Typical figures which are described include a French First World War pilot (from Historex parts), SS cavalryman (from Airfix parts), 18th Century Polish Lancer (30 mm metal), Byzantine Emperor (25 mm metal) and a Napoleonic Bavarian light infantryman (54 mm metal), though these are just a selection from the many others included.

Part three of this book is a miscellaneous section covering such diverse topics as home casting, horse animation, carving figures from wood and making dioramas, and it is completed by an appendix listing most of the main model figure manufacturers and suppliers inside and outside the UK.

Contributors to this book, which looks all set to become the standard work on the subject, read like a 'who's who' of modelling, and include Sid Horton, Cesare Milani, Roy Dilley, George Gush, Martin Rendall, Robert Gibson, Bill Hearne and Donald Featherstone. All are acknowledged experts in their own fields and experienced authors as well as modellers, making the text very

easy to follow and providing hours of fascination for figure modellers of all ages.

There are numerous line drawings in the text illustrating specific techniques or conversion projects, and 32 pages of photographs illustrating models both in construction and finished. Definitely not a book to be missed!

How to make model aircraft, by Chris Ellis. Hamlyn Publishing Group, Hamlyn House, 42 The Centre, Feltham, Middx. **Price £1.50.**

ALTHOUGH THIS is a beautifully produced book its value to the serious modeller is open to considerable doubt.

The author is, of course, well-known in modelling fields, if not so much for his aircraft modelling, certainly for his AFV and warship activities, and his shortcomings in the former become very apparent.

The book does not go into any great detail as far as turning the average plastic kit into a scale model is concerned and most of the contents have appeared in one form or another in other publications. This also applies to the photographs which most serious modellers will already have seen if they have followed the author's various travels around the magazine publishing business.

After reading the book one is left with a feeling that a lot more thought could have been given to the content and coverage, which is typified by the section on air brushing. This is a skilled and tricky operation and to dismiss it in four pages illustrated by manufacturer's hand-out photographs and rather vague line drawings, adequately sums up the theme of the whole publication.

The very newcomer to the hobby might well find the book of interest and if it helps to attract more to the hobby, as well as encourage younger modellers to look further afield, it will have served a useful purpose. But the average reader of this magazine will find little of interest in the 80 pages.

The Know How Book of Flying Models. Usborne Publishing Ltd, 20 Garrick Street, London WC2E 9BJ. **Price £1.30** (hardback) **75p** (paperback).

IN ALL THINGS you have to start somewhere, and most people's first attempts at a model is a paper dart. In the new 'Know How' series from Usborne there is a book on just that — paper and card models which really fly. They range from the simple dart ballasted with a paper clip to complicated kites and rubber-band powered missiles and launchers. There is even a hang glider made from drinking straws and a polythene bag. Colour pictures throughout, and clear, simple instructions make this ideal for the younger would-be aeromodeller.

Collecting Model Soldiers, by John G. Garratt. David & Charles, South Devon House, Newton Abbot, Devon. **Price £3.50.**

THIS IS RATHER John Garratt on the same old theme and ideas previously expressed in *Model Soldiers: A Collector's Guide* and *Model Soldiers for the Connoisseur* than a new book, despite its title. Books on the

'collecting' aspect of the hobby are now two a penny, and apart from the fact that Mr Garratt mentions some of the relative newcomers on the field missed from his previous books, this one tells us nothing we didn't know before. A harsh conclusion which we did not enjoy making but is true.

However, since this is the most up-to-date book on the subject, if you're a newcomer to the hobby, then it would be a good purchase. The book is well written in Mr Garratt's usual style and very readable, but there are only 33 photographs, most of which attempt to show too much to show anything at all. Still, 187 pages for £3.50 is good value by today's standards.

Modern Aeromodelling, by R. G. Moulton. Faber & Faber, 3 Queen Square, London WC1N 3AU. **Price £2.50.**

THIS IS A new edition of Ron Moulton's well-known book on flying model aircraft originally published in 1963, and although of limited value to scale modellers will be invaluable to all newcomers to the complexities of 'working' models, whether rubber-powered, control line or radio controlled.

Individual chapters cover such topics as the range of models available, tools and materials, motive power sources, free-flight models, control-line flying, radio control, scale flying models, competitions, construction techniques, covering and finishing, and, most important!, repairs.

The book is very well illustrated, extremely cheap considering the ground it covers, and altogether excellent value for anyone beginning in this hobby or experiencing the usual beginner's disasters.

Aviation

Civil Aircraft of the World, by John W. R. Taylor and Gordon Swanborough. Ian Allan Ltd, Terminal House, Shepperton, Middx. **Price £2.75.**

HERE, IN THIS new edition of an old favourite, you will find useful salient details of just about everything civil that flies, from Argentinian Aero Boeros to Czechoslovakian Zlins. For the first time, the major types of civilian-operated helicopters are also included though, sadly some may say, the Bristol Freighter, Britannia and the Constellation have been retired. Amazingly, however, the DC3 lives on, and justifiably so.

Whether your interest in civil aircraft is as a spotter, model maker, professional aircraft engineer or simple enthusiast, this nicely produced, quality volume is good value for the pictures alone (eight pages of them are in colour). You can check and compare specs, drool over what you'd buy if you had the cash (we fancy the eight-seat Gates Learjet 24D), or simply browse. There's also a useful index, and the test data has been metricated, but those who can still only think in ft, in, lb, mph and miles need not worry for both systems are used.

Naval

Carrier Operations in World War II, by David Brown. Volume 1: The Royal Navy,

price £3.75; Volume II: The Pacific Navies, **price £3.95**. Ian Allan Ltd, Terminal House, Shepperton, Middx.

VOLUME ONE of this pair originally appeared in 1968 (then at a price of 37/6!) and immediately provided a valuable and authoritative guide to the operations of the Navy's carriers during the last war, and, incidentally, to the flying activities of the embarked squadrons of the Fleet Air Arm.

Both the narrative, the tables and appendices and the photographs have provided much useful information and browsing delight to its readers. This volume has now been revised and completely re-set, giving David Brown the opportunity of correcting the few errors he subsequently found and to revise the photographs, bringing in some new ones.

Volume Two deals with the Japanese and US Navies in their epic struggles in 1941 and 1942 and follows much the same format and layout as Volume One, providing a handy pair of study and analysis of carrier operation. This volume, too, has some very rare and fascinating photographs and both of them are to be commended to lovers of ships and aircraft alike to whom they can be very profitable.

Military

Jane's Infantry Weapons 1975, edited by Major F. W. A. Hobart. Janes Yearbooks, Macdonald & Janes, Paulton House, 8 Shepherdess Walk, London N1 7LW. **Price £19.50.**

EVERY SO OFTEN there appears on every book reviewer's desk a book that is really something special. One of these rare occurrences happened recently when the massive *Jane's Infantry Weapons 1975* was passed over for the usual comments. Over the years we have come to rely on the 'last word' *Jane's Fighting Ships* and *Aircraft* and now the same attention to detail and thoroughness that has made those two works the last word on their subject has been turned to the complicated world of the infantry weapon.

As this is the first of what we hope will be many more volumes on the topic this review will go a bit deeper than most. The first impression is one of sheer bulk. The book measures 13 x 8½ x 1½ inches and weighs a hefty 8 lbs. There are over 850 pages and most pages carry at least one illustration. Print and picture quality are good and a good quality paper has been used.

Now for the content. The book starts with a very comprehensive article on small arm ammunition and then goes on to the separate sections. The first section is devoted to pistols and revolvers. A look at this section will give an idea of the format of the other sections. It starts with a short summary of the basics of revolvers and self-loading pistols. After that each nation's output is examined and the relevant data is given for nearly every pistol mentioned. Most pistols are illustrated by at least one clear photo and there are many cut-away drawings. Just about every pistol used during the present century is mentioned and thus such antiquities as the Mauser C96 get a mention as

well as such modern developments as the SIG P230. In between are such old favourites as the Enfield pistols and the section on Smith & Wesson revolvers is exceptionally comprehensive.

After the pistols there come sections on sub-machine-guns, rifles and machine-guns, all of which are very detailed and omit nothing of the large and varied weapon inventories of the last 50 years. Then comes a separate part on Area Weapons which covers grenades and mortars. It was in this section that we found one or two omissions, due mainly to the fact that the Swedish mortar manufacturers do not seem to have wished to be included. But the omissions are minor and are not really noticeable. A further separate part deals with anti-aircraft and anti-tank weapons used by infantry.

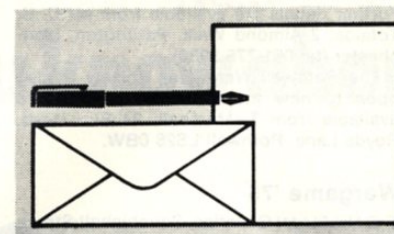
A further part gives a most useful breakdown of the infantry weapons in service with every state that has an army. Thus one can discover at a glance that Gambia uses Enfield pistols, the Sterling smg and the Bren. Singapore uses Tampella mortars and the M16 rifle, and so on.

The depth and coverage of this work is really quite staggering. We were prepared to find a good coverage on modern weapons but we were not prepared for the large coverage of most of the weapons used in the 20th Century. While we expected to find a good coverage on such items as the Stoner machine-gun system it came as quite a surprise to see a comprehensive mention of the ancient Schwarzlose machine-gun still in use with the Frelimo guerrillas. This wide coverage is the book's major asset for here in these pages are all the facts and detail anyone is ever likely to want to know about any weapon likely to be encountered — there is even a picture of an IRA terrorist holding an Armalite rifle! Despite the mass of print, each section is easy to read and understand and most technical terms are clearly explained in the introduction to each section.

Having made it known that we applaud the production of this work there are a few items to mention on the debit side. Top of the list is the price which in a work of such a size has to be on the heavy side. Even so £19.50 is a lot of money but in these days of rapidly rising costs it is not to be wondered at and many will save for a long while to add this momentous work to their libraries.

Another criticism is that surely some form of national heading could have been added to each page. As it is, if you open the book at any section the text has to be closely examined before it can be decided that one is dealing with Czech rather than Russian assault rifles, and even in the text the transition from one state to another is poorly captioned.

But these comments cannot detract from the importance of this huge book. This new Janes will soon be on the shelves of most libraries and in the honoured position in the collections of all with an interest in modern warfare and weapons. It is a superb work and our recommendations to obtain a copy if you have any chance at all are strong and sincere. Blow the cost — this book will be of the utmost value for years.



letters to the editor

Contributions

Letters to the editor selected for publication entitle the senders to each receive a free Airfix plastic construction kit, and the publication of photographs from readers is similarly rewarded. Airfix Products Ltd award the kits on the following scale:

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Letters to the editor should be addressed to: the Editor, *Airfix Magazine*, Bar Hill, Cambridge, CB3 8EL. If a reply is wanted, a stamped addressed envelope (or International Reply Coupon) should be enclosed. All photographs submitted for consideration should be clearly labelled with the sender's name and address on the back of each.

Opinions expressed by correspondents on this page are their own and do not necessarily reflect the views of the Editor or Airfix Products Ltd.

German markings

I WAS VERY interested in Mr Fontenoy's letter in the February issue regarding my series on German markings, especially the naval serial numbers list.

He is quite right inasmuch as the Ursinus fighter floatplane was number 782, and for some inexplicable reason was missed in my list. I have it in my manuscript and can only assume that it was left out when transcribing (see photo below).

There has always been a little mystery about this machine because it is not listed

in the Gotha section of the *Atlas Deutscher und Ausländischer Seeflugzeuge* although the earlier Ursinus-designed twin-engined machines are.

Quite recently that indefatigable researcher, Peter Grosz, found the answer. Whilst perusing the German Official Navy Records at Freiburg he discovered that the Ursinus seaplane fighter was built not by Gotha but by the small firm of Rex in Cologne. In the report of the Seeflugzeug Versuchs Kommando for the weeks of April 16-30 1917 it states: 'It crashed on its first taxi trials at 900 rpm by turning over on its nose. After this and further deliberations, the constructor has decided against further tests.'

The machine was, of course, years ahead of its time — in fact some 23 years before the Blackburn B.20 which utilised a similar idea of a retracting float incorporated into the lower fuselage. Just one of many examples of the ideas of First World War designers being well ahead of the technology available at the time.

As far as Nos 1107 and 1108 are concerned, the *Atlas* states that 1107 to 1116 were Albatros W.4s (page 91). Mr. Fontenoy may have confused Nos 1105 and 1106 which are listed as KW (Danzig) machines.

The Rumplers again pose a problem. The initial letter attached to the first 20 serial numbers was meant to indicate E for Monoplane and D for Biplane so that E4 and E8 would indicate monoplanes and, if Rumplers, could only be Tauben at this date. To confuse matters, Rumpler did produce a biplane flying boat in 1914 which was given the manufacturer's type number of 4E. The *Atlas* is very unclear about this, offering no more than a phrase to say that the numbers E4 and E8 are not 'firm'.



I have several photos of this flying boat and no markings at all are carried and all the people included in the pictures are in civilian clothes. Some authorities say that the 8E was a modified 4E but this is not certain either. However, the *Atlas* does state that the E4 had a 100 hp Argus engine which was one of the power alternatives fitted to the Taube in 1913/14. The 4E flying boat was fitted, according to my information, with a 150 hp Benz.

Harry Woodman, London SW14.

Wargames clubs

THE STRETFORD Tactical Society is a new wargames club which meets on the second Saturday of each month at the Stretford Civic Theatre between 6 and 11 pm. Both miniature and board games are played.

Further details are available from Mr C. B. Tofalos, 2 Almond Walk, Partington, Manchester (tel 061-775 3930).

The Rothwell Wargames Society is also open to new members. Full details are available from T. Marshall, 24 Elm Royd, Royds Lane, Rothwell LS26 0BW.

Wargame '75

THE McLELLAN Galleries, Sauchiehall Street, Glasgow, is the venue for the above exhibition, organised by Scottish Wargames Promotions, on Saturday, June 7. Wargame '75 will be open from 10 am until 8 pm and will include wargame displays, competitions and trade stands. For further information contact Dale A. Bilsland, 35 Gleneagles Cottages, Glasgow G14 9EY.

St Mawgan open day

RAF ST MAWGAN, Newquay, Cornwall, will present a Third International Air Day on Wednesday, August 6. The gates will open to the public at 9 am with the main flying display commencing at 2 pm. Make a note in your diaries. Ed.

Wrong poster

PLAISTOW PICTORIAL, 3 New Plaistow Road, London E15 3JA, have asked us to point out that the two models illustrated on page 387 of our February issue were, in fact, photographed against a backdrop of the lower section of one of their Lancaster posters, not an Aerofilms photograph as stated.

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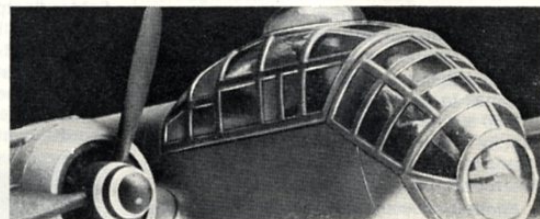
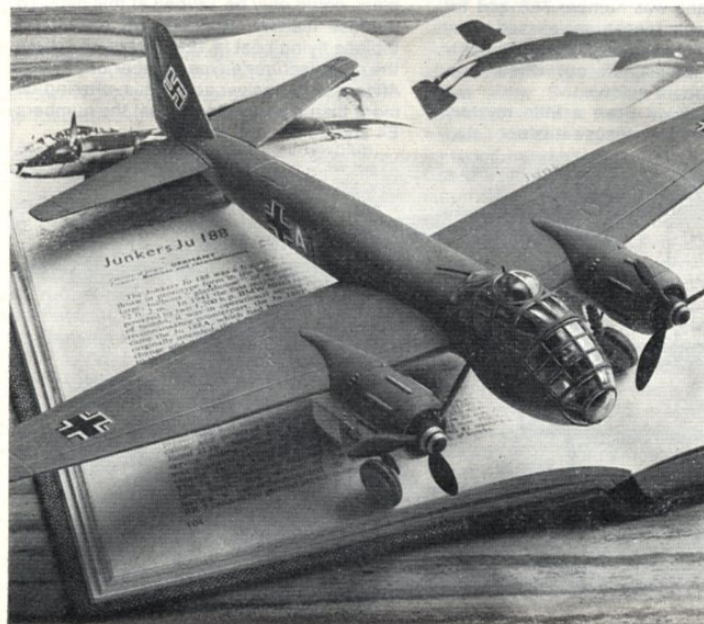
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No.5

What do you know about the police?



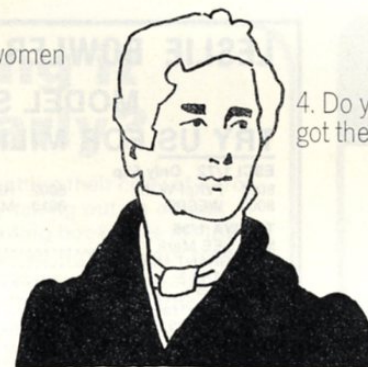
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England and Wales?



2. What is the minimum
number of people
required on an
identification parade?



3. Can policewomen
make arrests?



4. Do you know how policemen
got the nickname of "Bobbies"?



5. How many police officers in England
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Police Quiz, Dept AJ15 Home Office, London SW1A 2AP.

ANSWERS

1. Nearly 3,700.
2. Eight.
3. Yes, a policewoman has the same powers as a policeman.
4. From Sir Robert Peel, Home Secretary when the Metropolitan Police was formed in 1829.
5. 45.

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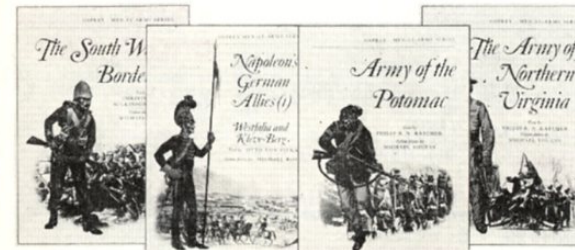
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